

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549**

**FORM S-3**

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

**NEUBASE THERAPEUTICS, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**

(State or other jurisdiction of incorporation or organization)

**46-5622433**

(I.R.S. Employer Identification No.)

**350 Technology Drive  
Pittsburgh, PA 15219  
(646) 450-1790**

(Address, including zip code, and telephone number,  
including area code, of registrant's principal executive offices)

**Dr. Dietrich Stephan  
President and Chief Executive Officer  
NeuBase Therapeutics, Inc.  
350 Technology Drive  
Pittsburgh, PA 15219  
(646) 450-1790**

(Name, address, including zip code, and telephone number,  
including area code, of agent for service)

*Copies to:*

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**From time to time after this registration statement becomes effective**  
(Approximate date of commencement of proposed sale to the public)

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer   
Non-accelerated filer

Accelerated filer   
Smaller reporting company   
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

## CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered <sup>(1)</sup>	Proposed maximum offering price per share <sup>(2)</sup>	Proposed maximum aggregate offering price	Amount of registration fee
Common stock, par value \$0.0001 per share	308,635 <sup>(3)</sup>	\$5.025	\$1,550,890.88	\$169.21

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the “Securities Act”), this Registration Statement on Form S-3 (this “Registration Statement”) shall also cover any additional shares of common stock, par value \$0.0001 per share (“Common Stock”), of NeuBase Therapeutics, Inc., a Delaware corporation (the “Registrant”), that become issuable by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without receipt of consideration.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) under the Securities Act. The offering price per share and aggregate offering price are based upon the average of the high and low prices for the Registrant’s Common Stock as reported on the Nasdaq Capital Market on June 17, 2021, a date within five business days prior to the filing of this Registration Statement.
- (3) All 308,635 shares of Common Stock are to be offered by the selling stockholder named herein, which shares were issued on April 26, 2021 to the selling stockholder (or for the benefit of the selling stockholder) pursuant to that certain Asset Purchase Agreement, dated as of January 27, 2021, by and among the Registrant, NeuBase Corporation, a wholly owned subsidiary of the Registrant, and the selling stockholder named herein, as amended by the Amendment to Asset Purchase Agreement, dated as of April 20, 2021, by and between the Registrant and the selling stockholder named herein.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission acting pursuant to said Section 8(a) may determine.

**The information in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.**

**Subject to Completion, dated June 23, 2021**

## PROSPECTUS

# neubase

NeuBase Therapeutics, Inc.  
308,635 Shares of Common Stock

This prospectus relates solely to the resale from time to time by the selling stockholder listed in the section of this prospectus entitled “Selling Stockholder” (the “Selling Stockholder”) of up to 308,635 shares (the “Shares”) of our common stock, par value \$0.0001 per share (“Common Stock”). The Shares consist solely of shares of Common Stock issued by us on April 26, 2021, pursuant to that certain Asset Purchase Agreement, dated as of January 27, 2021 (as amended, the “APA”), by and among us, NeuBase Corporation, our wholly owned subsidiary, and the Selling Stockholder. We are registering the resale of the Shares in connection with registration rights granted to the Selling Stockholder pursuant to the APA.

Our registration of the Shares covered by this prospectus does not mean that the Selling Stockholder will offer or sell any of the Shares. The Selling Stockholder may sell the Shares covered by this prospectus in a number of different ways and at varying prices. For additional information on the possible methods of sale that the Selling Stockholder may use, you should refer to the section of this prospectus entitled “Plan of Distribution” beginning on page 10 of this prospectus. We will not receive any of the proceeds from the Shares sold by the Selling Stockholder.

No underwriter or other person has been engaged to facilitate the sale of the Shares in this offering. The Selling Stockholder may be deemed to be an “underwriter” within the meaning of the Securities Act of 1933, as amended (the “Securities Act”), of the Shares that they are offering pursuant to this prospectus. We will bear all costs, expenses and fees in connection with the registration of the Shares. The Selling Stockholder will bear all commissions and discounts, if any, attributable to the sale of the Shares.

You should read this prospectus, any applicable prospectus supplement and any related free writing prospectus carefully before you invest.

***Investing in our Common Stock involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading “Risk Factors” contained on page 5 of this prospectus, any applicable prospectus supplement and in any applicable free writing prospectuses, and under similar headings in the documents that are incorporated by reference into this prospectus.***

Our Common Stock is currently listed on the Nasdaq Capital Market under the symbol “NBSE.” On June 22, 2021, the last reported sales price for our Common Stock was \$4.93 per share. Our stock price is subject to fluctuation. There has been no change recently in our financial condition or results of operations that is consistent with a recent change in our stock price.

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

The date of this prospectus is \_\_\_\_\_, 2021.

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## ABOUT THIS PROSPECTUS

You should rely only on the information we have provided or incorporated by reference into this prospectus, any applicable prospectus supplement and any related free writing prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the Shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of a security.

The Selling Stockholder is offering the Shares only in jurisdictions where such issuances are permitted. The distribution of this prospectus and the issuance of the Shares in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the issuance of the Shares and the distribution of this prospectus outside the United States. This prospectus does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, the Shares offered by this prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission (the “SEC”), under which the Selling Stockholder may offer from time to time up to an aggregate of 308,635 shares of Common Stock in one or more offerings. If required, each time the Selling Stockholder offers shares of Common Stock, we will provide you with, in addition to this prospectus, a prospectus supplement that will contain specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to that offering. We may also use a prospectus supplement and any related free writing prospectus to add, update or change any of the information contained in this prospectus or in documents we have incorporated by reference. This prospectus, together with any applicable prospectus supplements, any related free writing prospectuses and the documents incorporated by reference into this prospectus, includes all material information relating to this offering. To the extent that any statement that we make in a prospectus supplement is inconsistent with statements made in this prospectus, the statements made in this prospectus will be deemed modified or superseded by those made in a prospectus supplement. Please carefully read both this prospectus and any prospectus supplement together with the additional information described below under the section entitled “Important Information Incorporated by Reference” before buying any of the securities offered.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section entitled “Where You Can Find More Information.”

## PROSPECTUS SUMMARY

*This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference in this prospectus, and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, any applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our Common Stock discussed under the heading “Risk Factors” contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus forms a part. Unless otherwise mentioned or unless the context requires otherwise, all references in this prospectus to “NeuBase,” the “Company,” “we,” “us,” “our” or similar references mean NeuBase Therapeutics, Inc. and its subsidiaries.*

### NeuBase Therapeutics, Inc.

We are a biotechnology company working towards accelerating the genetic revolution by developing a new class of synthetic medicines. Our modular peptide-nucleic acid antisense oligo (“PATrOL™”) platform which outputs “anti-gene” candidate therapies is designed to combine the specificity of genetic sequence-based target recognition with a modularity that enables use of various *in vivo* delivery technologies to enable broad and also selective tissue distribution capabilities. Given that every human disease may have a genetic component, we believe that our differentiated platform technology has the potential for broad impact by increasing, decreasing or changing gene function at either the DNA or RNA levels to resolve the progression to disease, as appropriate, in a particular indication. We plan to use our platform to address diseases driven by genetic variation and mutation, and we are initially focused on myotonic dystrophy type 1 (“DM1”), Huntington’s disease (“HD”), and oncology applications.

Globally, there are thousands of genetic diseases, most of which lack any therapeutic options. In addition, rare genetic diseases are often particularly severe, debilitating or fatal. Traditionally, therapeutic development for each rare genetic disorder has been approached with a unique strategy, which is inefficient, as there are thousands of diseases that need treatment solutions. The collective population of people with rare diseases stands to benefit profoundly from the emergence of a scalable and modular treatment development platform that allows for a more efficient discovery and delivery of drug product candidates to address these conditions cohesively.

Mutated proteins resulting from errors in deoxyribonucleic acid (“DNA”) sequences cause many rare genetic diseases and cancer. DNA in each cell of the

body is transcribed into pre-RNA, which is then processed (spliced) into mRNA which is exported into the cytoplasm of the cell and translated into protein. This is termed the “central dogma” of biology. Therefore, when errors in a DNA sequence occur, they are propagated to RNAs and can become a damaging protein.

The field has learned that antisense oligonucleotides (“ASOs”) can inactivate target RNAs before they can produce harmful proteins by binding them in a sequence-specific manner, which can delay disease progression or even eliminate genetic disease symptoms. ASOs designed by others to target known disease-related mutant RNA sequences have been shown to be able to degrade these transcripts and have a positive clinical impact. Similarly, applications in modifying splicing of pre-RNA in the nucleus of the cell have been developed by others to exclude damaging exons from the final mRNA product and have been approved by the Food and Drug Administration (“FDA”). We plan to extend upon these conceptual breakthroughs by utilizing our first-in-class technology which produces investigational therapies which are similar in structure to ASOs in that they are comprised of a backbone onto which are tethered nucleobases that engage a genetic sequence of interest using complementary base-pairing, but which we believe have significant benefits in certain application areas to better resolve clinical disorders.

We are developing “anti-gene” therapies. Anti-genes are similar to, but distinct from, antisense oligonucleotides (ASOs). ASOs are short single strands of nucleic acids (traditionally thought of as single-stranded DNA molecules) which bind to defective RNA targets in cells and inhibit their ability to form defective proteins. We believe we are a leader in the discovery and development of anti-gene therapies, a new class of investigational therapies derived from peptide-nucleic acids (“PNAs”). The key differentiator between ASOs and anti-genes is that the scaffold is not derived from a natural sugar-phosphate nucleic acid backbone, rather is a synthetic polyamide which is charge-neutral and characterized by high binding affinity to a nucleic acid target, high sequence specificity, high stability, and is relatively immunologically inert. These features provide potential advantages over ASOs and other genetic therapies for modulating disease-causing genes including increased unique disease target opportunities, improved target specificity and a reduction in both sequence-dependent and independent toxicities. In addition, as these anti-genes are manufactured via standard peptide synthesis methods, they efficiently leverage the advancements in the synthetic peptide industry to enable modulation of pharmacophore delivery, pharmacokinetics, sub-cellular placement and endosomal escape.

In addition to the scaffold, we have a kit of natural nucleobases, chemically modified nucleobases which add further precision to a nucleic acid target of interest, and proprietary bi-specific nucleobases (“janus” nucleobases) which can be added to the scaffold to enable more precise target engagement. These bi-specific nucleobases, in particular, have been shown to enable accessing double stranded RNA targets comprised of secondary structures such as hairpins (double stranded RNA targets which are folded upon themselves). This allows us to potentially access regions of the target transcript which may be unique in secondary structure to allow enhanced selectivity for the target (mutant) RNA as compared to the normal RNA. Enhanced selectivity for mutant RNAs as compared to normal RNAs is often important as normal RNAs are often required for effective functioning of the cell.

A third component of the modular platform is the ability to add delivery technology to the anti-gene pharmacophores so as to reach a desired cell or tissue upon *in vivo* administration. There is flexibility to append various delivery technologies to the pharmacophore to allow either broad tissue distribution or narrow cell and/or tissue targeting if so desired based on targets. One such technology is a chemical moiety that can be used to decorate the scaffold directly and allows the anti-genes to penetrate cell membranes and into subcellular compartments where they act as well as to distribute throughout the body when administered systemically.

Finally, in addition to the anti-gene scaffold, modified nucleobases and delivery technology, the platform toolkit also includes linker technology which, when added to both ends of the anti-genes, has been shown in early pre-clinical studies to allow cooperative binding between individual drug molecules once they are engaged with the nucleic acid target to form longer and more tightly bound drugs.

This toolkit of components forms the PATROL™ platform and allows us to manufacture gene and transcript-specific anti-genes.

We are currently focused on therapeutic areas in which we believe our drugs will provide the greatest benefit with a significant market opportunity. We intend to utilize our technology to build a pipeline of custom designed therapeutics for additional high-value disease targets. We are developing several preclinical programs using our PATROL™ platform, including the NT0100 program, targeted at Huntington’s disease, a repeat expansion disorder, the NT0200 program, targeted at myotonic dystrophy, type 1, a second repeat expansion disorder, and a program targeting *KRAS* G12D and G12V mutations. Preclinical studies are being conducted to evaluate the PATROL™ platform technology and program candidates in the areas of pharmacokinetics, pharmacodynamics and tolerability, and we reported results from certain of those studies in the first calendar quarter of 2020 and have extended upon certain of those studies in the fourth calendar quarter of 2020 which illustrated that our anti-gene technology can be administered to human patient-derived cell lines and systemically (via intravenous (IV) administration) into animals with DM1 (a genetically modified model accepted as representative of the human disease in skeletal muscle) and can address the causal genetic defect. We also presented additional results from ongoing preclinical studies evaluating the PATROL™ platform and pipeline indications at an R&D day in June 2021. In addition, we believe that the emerging pipeline of other investigational therapies that target primary and secondary RNA structure and genomic DNA potentially allows a unique market advantage across a variety of rare diseases and oncology targets.

Overall, using our PATROL™ platform, we believe we can create anti-gene therapies that may have distinct advantages over other chemical entities currently in the market or in development for genetic medicine applications to modulate mutant genes and improve a clinical trait or disorder. These potential advantages may differ by indication and can include, among others:

- increased unique target opportunities, improved target specificity and a reduction in both sequence-dependent and independent toxicities by virtue of a synthetic polyamide scaffold which is charge-neutral and characterized by high binding affinity to a nucleic acid target, high sequence specificity, high stability, and is relatively immunologically inert;
- potential long durability by nature of the relatively highly stable polyamide scaffold;
- our anti-genes are manufactured via standard peptide synthesis methods and thus they efficiently leverage advances in the synthetic peptide industry to enable facile addition of known moieties enabling modulating pharmacophore delivery, pharmacokinetics, sub-cellular placement and endosomal escape; and
- our anti-genes may be able to target double stranded structures in RNA, which may allow unique target opportunities that standard ASOs cannot access.

With these unique component parts and their advantages, we believe our PATROL™ platform-enabled anti-gene therapies can potentially address a multitude of rare genetic diseases and cancer, among other indications.

We employ a rational approach to selecting disease targets, considering many scientific, technical, business and indication-specific factors before choosing each indication. We intend to build a diverse portfolio of therapies to treat a variety of health conditions, with an initial emphasis on rare genetic diseases and cancers. A key component of this strategy is continuing to improve the scientific understanding and optimization of our platform technology and programs, including how various components of our platform technology perform, and how our investigational therapies impact the biological processes of the target diseases, so that we can utilize this information to reduce risk in our future programs and indications. In addition, with our expertise in discovering and characterizing novel anti-gene investigational therapies, we believe that our scientists can optimize the properties of our PATROL™-enabled drug candidates for use with particular targets that we determine to be of high value.

We believe the depth of our knowledge and expertise with PNAs, engineered nucleotides, genetics and genomics and therapeutic development of first-in-class modalities provides potential flexibility to determine the optimal development and commercialization strategy to maximize the near and longer-term value of our therapeutic programs.

We plan to employ distinct partnering strategies based on the specific drug candidate, therapeutic area expertise and resources potential partners may bring to a collaboration. For some drug candidates, we may choose to develop and, if approved, commercialize them ourselves or through our affiliates. For other drug candidates, we may form single or multi-asset partnerships leveraging our partners' global expertise and resources needed to support large commercial opportunities.

We believe the breadth of the PATrOL™ platform gives us the ability to potentially address a multitude of inherited genetic diseases. The technology may allow us to target and inactivate gain-of-function and change-of-function mutations, and address targets in recessive disease and haploinsufficiencies by altering splicing to remove damaging exons/mutations or increasing expression of wild-type alleles by various means.

Modified scaffolds, optimized versions of traditional PNA scaffolds which we utilize, have demonstrated preclinical *in vivo* efficacy in several applications which we believe can be translated across many targets and into humans. For example, in oncology such scaffolds have reduced expression of an activated oncogene (the epidermal growth factor receptor of the EGFR gene) and have modified gene regulation by targeting microRNA to slow tumor growth. Such scaffolds have also demonstrated *in vivo* engagement with the double-stranded genome in studies done by others to perform *in vivo* single-base genome editing.

## Product Pipeline

### **NT0100 Program - PATrOL™ Enabled Anti-Gene for Huntington's Disease**

HD is a devastating rare neurodegenerative disorder. After onset, symptoms such as uncontrolled movements, cognitive impairments and emotional disturbances worsen over time. HD is caused by toxic aggregation of mutant huntingtin protein, leading to progressive neuron loss in the striatum and cortex of the brain. The wild-type huntingtin gene (*HTT*) has a region in which a three-base DNA sequence, CAG, is repeated many times. When the DNA sequence CAG is repeated 26 or fewer times in this region, the resulting protein behaves normally. While the normal or wild-type function of HTT protein is largely uncharacterized, it is known to be essential for normal brain development. When the DNA sequence CAG is repeated 40 times or more in this region, the resulting protein becomes toxic and causes HD. Every person has two copies, or alleles, of the *HTT* gene. Only one of the alleles (the "mutant" allele) needs to bear at least 40 CAG repeats for HD to occur. HD is one of many known repeat expansion disorders, which are a set of genetic disorders caused by a mutation that leads to a repeat of nucleotides exceeding the normal threshold. Current therapies for patients with HD can only manage individual symptoms. There is no approved therapy that has been shown to delay or halt disease progression. There are approximately 30,000 symptomatic patients in the U.S. and more than 200,000 at-risk of inheriting the disease globally.

One especially important advantage of the PATrOL™ platform that makes it promising for the treatment of repeat expansion disorders like HD is the ability of our anti-genes to potentially target the RNA hairpin. This allows our therapies to potentially inactivate mutant *HTT* mRNA before it can be translated into a harmful protein via selective binding to the expanded CAG repeats while leaving the normal *HTT* mRNA largely unbound to drug and producing functional protein. Achieving mutant allele selectivity would be a key advantage for any RNA-based approach aiming to treat HD. In March of 2020, we illustrated the ability of our anti-gene technology to enrich for translational inhibition and resultant reduction of mutant protein formation in human patient-derived cell lines versus wild-type protein production, and that our anti-genes can inhibit ribosomal elongation via high-affinity binding to a target RNA. In June 2021, we presented new data demonstrating selective reduction of mutant huntingtin protein in the brain after subcutaneous dosing in the zQ175 Huntington's disease mouse model.

The PATrOL™-enabled NT0100 program is currently in preclinical development for the treatment of HD. We expect to initiate scale up and toxicology activities in calendar year 2022, with a target IND filing in calendar year 2023.

### **NT0200 Program - PATrOL™ Enabled Anti-Gene for Myotonic Dystrophy Type 1**

Our pipeline also contains a second potentially transformative medicine, which we believe has significant potential for Myotonic dystrophy, type 1, a severe dominantly inherited genetic disease. DM1 is characterized clinically by myotonia (an inability to relax a muscle after contraction), muscle weakness and wasting, cardiac conduction defects and cognitive deficits. DM1 is caused by an expansion of a CUG trinucleotide repeat in the 3' untranslated region ("UTR"), a noncoding region of the myotonic dystrophy protein kinase gene (*DMPK*) transcript. Diagnosis is confirmed by molecular genetic testing of the length of a trinucleotide repeat expansion. Repeat length exceeding 34 repeats is abnormal and often patients have hundreds or thousands of repeat units. Molecular genetic testing detects pathogenic variants in nearly 100% of affected individuals. It is estimated that the global prevalence of DM1 is approximately 1 in 20,000 individuals.

The trinucleotide repeat expansion in the transcript causes disease by forming an aberrant hairpin structure in the nucleus of patient cells that captures and sequesters proteins that have critical functions in the nucleus related to appropriate splicing of hundreds of transcripts. These sequestered proteins cannot then fulfill their normal functions. In addition, it has been documented that sequestration of the mutant *DMPK* transcripts in the nucleus results in their inability to be translated and potentially results in haploinsufficiency, a situation where 50% of the protein is not enough to maintain normal function. Mice with both copies of their *Dmpk* gene knocked out manifest a cardiac conduction defect (Berul CI, Maguire CT, Aronovitz MJ, Greenwood J, Miller C, Gehrmann J, Housman D, Mendelsohn ME, Reddy S. *Dmpk* dosage alterations result in atrioventricular conduction abnormalities in a mouse myotonic dystrophy model. *J Clin Invest.* 1999 Feb;103(4):R1-7. doi: 10.1172/JCI5346. PMID: 10021468; PMCID: PMC408103.) and a CNS phenotype characterized by abnormal long-term potentiation (Schulz PE, McIntosh AD, Kasten MR, Wieringa B, Epstein HF. A role for myotonic dystrophy protein kinase in synaptic plasticity. *J Neurophysiol.* 2003 Mar;89(3):1177-86. doi: 10.1152/jn.00504.2002. Epub 2002 Nov 13. PMID: 12612014.) hypothesized to be due to inappropriate cytoskeletal remodeling. We propose that our mechanism of action is via direct engagement of our anti-gene with the expanded CUG repeat hairpin structure in the 3' UTR of the mutant transcript, invasion and opening of the hairpin structure, and release of the sequestered CUG-repeat binding proteins. This release of sequestered proteins which are normally involved in developmentally appropriate pre-mRNA splicing in the nucleus resolves the generalized splice defect and thus the major causal event. Our DM1 anti-gene is designed to not specifically degrade the mutant transcript, rather to release these RNA-protein aggregates through steric displacement, which could also resolve any potential haploinsufficiency and as a result may improve endophenotypes of the clinical condition, such as in the heart and brain (contingent on delivering effective concentrations of anti-gene to these tissues). Our recent data illustrates that we are able to systemically deliver our anti-genes in a DM1 genetic mouse model, engage the target in the skeletal muscles of the animals, and induce molecular rescue of the causal splice defects, and functional rescue of the phenotype.

The PATrOL™-enabled NT0200 program is currently in preclinical development for the treatment of DM1. We expect to initiate scale up and toxicology activities beginning in the middle of calendar year 2021, with an IND filing planned during calendar year 2022.

#### **Additional Indications**

On June 8, 2021, we unveiled a program targeting two *KRAS* oncogenic driver mutations, G12D and G12V, and presented *in vitro* and *in vivo* data from the new program. In addition, we are in the process of building an early stage pipeline of other therapies that focus on the unique advantages of our technology across a variety of diseases with an underlying genetic driver.

#### **Asset Purchase Agreement**

On January 27, 2021, we entered into an Asset Purchase Agreement by and among us, NeuBase Corporation, our wholly owned subsidiary, and Vera Therapeutics, Inc. (the “Selling Stockholder”) as amended by the Amendment to Asset Purchase Agreement, dated as of April 20, 2021, by and between us and the Selling Stockholder (collectively, the “APA”). Pursuant to the terms of the APA, we acquired infrastructure, materials, and intellectual property for peptide-nucleic acid (PNA) scaffolds from the Selling Stockholder for total consideration of approximately \$0.8 million in cash and 308,635 shares of common stock (of which 146,375 were issued to the Selling Stockholder and 162,260 are being held in escrow for the benefit of the Selling Stockholder and released to the Selling Stockholder in accordance with the terms of an escrow agreement between NeuBase Corporation and the Selling Stockholder). The transaction closed on April 26, 2021, and we issued the Shares to the Selling Stockholder on that date.

In connection with the issuance and sale of the Shares, we granted certain registration rights with respect to the Shares, pursuant to the APA. As required by the APA, we agreed to, among other things, (i) file a registration statement under the Securities Act with the SEC to cover the resale of the Shares by the Selling Stockholder, (ii) use commercially reasonable efforts to cause such registration statement to become effective as soon as practicable after the filing thereof and (iii) keep such registration statement continuously effective in accordance with the terms of the APA. The registration statement of which this prospectus is a part relates to the resale of the Shares.

#### **Additional Information**

For a complete description of our business, financial condition, results of operations and other important information, we refer you to our filings with the SEC that are incorporated by reference in this prospectus, including our Annual Report on Form 10-K for the year ended September 30, 2020 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021. For instructions on how to find copies of these documents, see the section entitled “Where You Can Find More Information.”

We were incorporated under the laws of the State of Delaware on August 4, 2009, as successor to BBM Holdings, Inc. (formerly known as Prime Resource, Inc., which was organized March 29, 2002 as a Utah corporation) pursuant to a reincorporation merger. On August 4, 2009, we reincorporated in Delaware as “Ohr Pharmaceutical, Inc.” On July 12, 2019, we completed a reverse merger transaction (the “Merger”) with NeuBase Corporation (formerly known as NeuBase Therapeutics, Inc.), a Delaware corporation, and, upon completion of the Merger, we changed our name to “NeuBase Therapeutics, Inc.” Shares of our Common Stock commenced trading on the Nasdaq Capital Market under the ticker symbol “NBSE” as of market open on July 15, 2019. Our principal executive offices are located at 350 Technology Drive, Pittsburgh, PA 15219, and our telephone number is (646) 450-1790. Our website is located at [www.neubasetherapeutics.com](http://www.neubasetherapeutics.com). Any information contained on, or that can be accessed through, our website is not incorporated by reference into, nor is it in any way part of, this prospectus and should not be relied upon in connection with making any decision with respect to an investment in our securities. We are required to file annual, quarterly and current reports, proxy statements and other information with the SEC. You may obtain any of the documents filed by us with the SEC at no cost from the SEC’s website at [www.sec.gov](http://www.sec.gov).

## **RISK FACTORS**

Investing in shares of our Common Stock involves a high degree of risk. Before making an investment decision, you should carefully consider the risks described below and under “Risk Factors” in any applicable prospectus supplement and in our most recent Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q, as well as any amendments thereto, together with all of the other information appearing in or incorporated by reference into this prospectus and any applicable prospectus supplement, before deciding whether to purchase any of the shares of Common Stock being offered. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our Common Stock could decline due to any of these risks, and you may lose all or part of your investment.

## **DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus and the documents incorporated by reference into this prospectus may contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), about the Company and its subsidiaries. These forward-looking statements are intended to be covered by the safe harbor for forward-looking statements provided by the Private Securities Litigation Reform Act of 1995. Forward-looking statements are not statements of historical fact, and can be identified by the use of forward-looking terminology such as “believes,” “expects,” “may,” “will,” “could,” “should,” “projects,” “plans,” “goal,” “targets,” “potential,” “estimates,” “pro forma,” “seeks,” “intends” or “anticipates” or the negative thereof or comparable terminology. Forward-looking statements include discussions of strategy, financial projections, guidance and estimates (including their underlying assumptions), statements regarding plans, objectives, expectations or consequences of various transactions, and statements about the future performance, operations, products and services of the Company and its subsidiaries. We caution our stockholders and other readers not to place undue reliance on such statements.

You should read this prospectus and the documents incorporated by reference into this prospectus completely and with the understanding that our actual future results may be materially different from what we currently expect. Our business and operations are and will be subject to a variety of risks, uncertainties and other factors. Consequently, actual results and experience may materially differ from those contained in any forward-looking statements. Such risks, uncertainties and other factors that could cause actual results and experience to differ from those projected include, but are not limited to, the risk factors set forth in Part I – Item 1A, “Risk Factors,” in our Annual Report on Form 10-K for the year ended September 30, 2020, as filed with the SEC on December 23, 2020, the risk factors set forth in Part II – Item 1A “Risk Factors,” in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021, as filed with the SEC on May 14, 2021, and elsewhere in the documents incorporated by reference into this prospectus.

You should assume that the information appearing in this prospectus, any applicable prospectus supplement, any related free writing prospectus and any document incorporated herein by reference is accurate as of its date only. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those

expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. All written or oral forward-looking statements attributable to us or any person acting on our behalf made after the date of this prospectus are expressly qualified in their entirety by the risk factors and cautionary statements contained in and incorporated by reference into this prospectus. Unless legally required, we do not undertake any obligation to release publicly any revisions to such forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

#### USE OF PROCEEDS

We are filing the registration statement of which this prospectus forms a part to permit the Selling Stockholder to resell the Shares. We will not receive any proceeds from the sale of the Shares by the Selling Stockholder.

The Selling Stockholder will pay any underwriting discounts, selling commissions and stock transfer taxes and any similar expenses attributable to the sale of the Shares (except as otherwise set forth in the APA). We will bear all other costs, fees and expenses incurred in effecting the registration of the Shares covered by this prospectus. These may include, without limitation, all registration and filing and listing fees, printing fees, fees and disbursements of our counsel, blue sky fees and expenses, and expenses of our independent accountants in connection with any regular or special reviews or audits incident to or required by any registration.

#### SELLING STOCKHOLDER

The shares of Common Stock being offered by the Selling Stockholder are those held by the Selling Stockholder. For additional information regarding the issuances of those shares of Common Stock, see the section entitled “Summary—Asset Purchase Agreement” above. We are registering the Shares in order to permit the Selling Stockholder to offer the Shares for resale from time to time. Except for the transactions contemplated by the APA and the ownership of Shares, the Selling Stockholder has not had any material relationship with us within the past three years.

The table below describes the Selling Stockholder and information regarding the beneficial ownership of our Common Stock held, as of June 22, 2021, by the Selling Stockholder, the number of Shares being offered hereby, and information with respect to the shares of Common Stock to be beneficially owned by the Selling Stockholder after completion of this offering. The fourth column assumes the sale of all of the Shares offered by the Selling Stockholder pursuant to this prospectus. The percentages in the following table reflect the shares of Common Stock beneficially owned by the Selling Stockholder as a percentage of the total number of shares of Common Stock outstanding as of June 22, 2021. As of June 22, 2021, 32,716,827 shares of Common Stock were outstanding.

In accordance with the terms of the APA, this prospectus generally covers the resale of the maximum number of Shares as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the APA.

The Selling Stockholder may sell all, some or none of its Shares in this offering. See the section entitled “Plan of Distribution.”

The percentages of shares beneficially owned prior to and after the offering are based on 32,716,827 shares of our Common Stock outstanding as of June 22, 2021, including shares of Common Stock covered hereby.

Name	Shares Beneficially Owned Prior to the Offering(1)		Maximum Number of Shares of Common Stock to be Offered Pursuant to this Prospectus	Shares Beneficially Owned After the Offering(1)(2)	
	Number	Percentage		Number	Percentage
Vera Therapeutics, Inc.	308,635 <sup>(3)</sup>	0.9%	308,635	0	0%

- (1) Beneficial ownership is determined in accordance with Rule 13d-3 under the Exchange Act. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, shares of Common Stock subject to warrants, options and other convertible securities held by that person that are currently exercisable or exercisable within 60 days of June 22, 2021 are deemed outstanding. Shares subject to warrants, options and other convertible securities, however, are not deemed outstanding for the purpose of computing the percentage ownership of any other person.
- (2) Assumes that the Selling Stockholder disposes of all of the Shares covered by this prospectus and does not acquire beneficial ownership of any additional shares. The registration of these Shares does not necessarily mean that the Selling Stockholder will sell all or any portion of the shares covered by this prospectus.

- (3) Represents (i) 146,375 shares of Common Stock issued to the Selling Stockholder upon the closing of the transactions contemplated by the APA (the “Closing”), (ii) 54,070 shares of Common Stock issued to an escrow agent for the benefit of the Selling Stockholder upon the Closing, which shares are to be released 90 days following the Closing date, and (iii) 108,190 shares of Common Stock issued to an escrow agent for the benefit of the Selling Stockholder upon the Closing, which shares serve as collateral for the indemnification obligations of the Selling Stockholder under the APA and are to be released 18 months following the Closing date in accordance with the terms of an escrow agreement. Pursuant to the terms of the APA, the Selling Stockholder, for so long as it holds any of the outstanding shares of Common Stock it shall not, directly or indirectly, (a) sell, transfer or otherwise dispose of any such shares if (i) such sale, transfer or other disposition would exceed five percent of the average daily trading volume of Common Stock, as reported on The Nasdaq Stock Market LLC (“Nasdaq”), for the five consecutive trading days ending on the trading day immediately preceding such sale, transfer or other disposition, or (ii) the price at which such shares are sold, transferred or otherwise disposed of is less than the greater of (A) \$8.50 per share and (B) the volume weighted average closing price per share of Common Stock, as reported on Nasdaq, for the five consecutive trading days ending on the trading day immediately preceding such sale, transfer or other disposition, (b) enter into any swap, hedge, or other agreement or arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of any Common Stock, whether any such transaction is to be settled by delivery of Common Stock or other securities, in cash or otherwise; (c) engage in any short-selling of Common Stock.

#### Indemnification

Under the APA, we have agreed to indemnify the Selling Stockholder, its affiliates and permitted transferees against certain losses, claims, damages, liabilities, settlement costs and expenses, including certain liabilities under the Securities Act and the Exchange Act.

#### PLAN OF DISTRIBUTION

We are registering the Shares to permit the resale of these shares of Common Stock by the holders of the Shares from time to time after the date of this prospectus, subject to certain trading restrictions set forth in the APA. We will not receive any of the proceeds from the sale by the Selling Stockholder of the shares of Common Stock. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock.

The Selling Stockholder may sell all or a portion of the shares of Common Stock beneficially owned by it and offered hereby from time to time, subject to certain trading restrictions set forth in the APA, directly or through one or more underwriters, broker-dealers or agents. If the shares of Common Stock are sold through underwriters or broker-dealers, the Selling Stockholder will be responsible for underwriting fees, discounts or commissions or agent’s commissions. The shares of Common Stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices, in each case subject to certain trading restrictions set forth in the APA. The Selling Stockholder will act independently of us in making decisions with respect to the timing, manner and size of each sale. Except as otherwise prohibited under the APA, these sales may be effected in transactions, which may involve cross or block transactions:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing of options, whether such options are listed on an options exchange or otherwise;
- in ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- in block trades in which the broker-dealer will attempt to sell the Shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- through purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- in an exchange distribution in accordance with the rules of the applicable exchange;
- in privately negotiated transactions;
- through the distribution of the Common Stock by the Selling Stockholder to its partners, members or stockholders;
- through one or more underwritten offerings on a firm commitment or best efforts basis;
- whereby broker-dealers may agree with the Selling Stockholder to sell a specified number of such shares at a stipulated price per share;
- in a combination of any such methods of sale; and
- in any other method permitted pursuant to applicable law.

In addition, any shares covered by this prospectus that qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than under this prospectus.

If the Selling Stockholder effects such transactions by selling shares of Common Stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the Selling Stockholder or commissions from purchasers of the shares of Common Stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of Common Stock or otherwise, the Selling Stockholder, pursuant to the terms of the APA, may not (i) enter into hedging transactions with broker-dealers, (ii) engage in short sales of the shares of Common Stock, (iii) sell shares of Common Stock short or deliver shares of Common Stock covered by this prospectus to close out short positions, or (iv) return borrowed shares in connection with any short sales. The Selling Stockholder may loan or pledge shares of Common Stock to broker-dealers that in turn may sell such shares, subject to any restrictions that are otherwise applicable to the Selling Stockholder pursuant to the APA.

The Selling Stockholder may pledge or grant a security interest in some or all of the shares of Common Stock owned by it and, if it defaults in the performance of its secured obligations, the pledgees or secured parties may offer and sell the shares of Common Stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the Selling Stockholder list to include the pledgee, transferee or other successors in interest as a Selling Stockholder under this prospectus. The Selling Stockholder also may transfer and donate the shares of Common Stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The Selling Stockholder and any broker-dealer participating in the distribution of the shares of Common Stock may be deemed to be “underwriters” within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of Common Stock is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of Common Stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the Selling Stockholder and any discounts, commissions or concessions allowed or reallocated or paid to broker-dealers. The Selling Stockholder may indemnify any broker-dealer that participates in transactions involving the sale of the shares of Common Stock against certain liabilities, including liabilities arising under the Securities Act.

Under the securities laws of some states, the shares of Common Stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of Common Stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with. The aggregate proceeds to the Selling Stockholder from the sale of the Common Stock offered will be the purchase price of the Common Stock less discounts or commissions, if any. The Selling Stockholder reserves the right to accept and, together with its agents from time to time, to reject, in whole or in part, any proposed purchase of Common Stock to be made directly or through agents. There can be no assurance that the Selling Stockholder will sell any or all of the shares of Common Stock registered pursuant to the registration statement of which this prospectus forms a part.

The Selling Stockholder and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of Common Stock by the Selling Stockholder and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of Common Stock to engage in market-making activities with respect to the shares of Common Stock. All of the foregoing may affect the marketability of the shares of Common Stock and the ability of any person or entity to engage in market-making activities with respect to the shares of Common Stock.

We will pay all expenses of the registration of the shares of Common Stock pursuant to the APA, estimated to be approximately \$90,169 in total, including, without limitation, SEC filing fees and expenses of compliance with state securities or “Blue Sky” laws; provided, however, that a Selling Stockholder will pay all underwriting fees, discounts or commissions attributable to the sale of the Shares or any legal fees and expenses of counsel to the Selling Stockholder, if any. We will indemnify the Selling Stockholder against certain liabilities, including certain liabilities arising under the Securities Act or the Exchange Act. We may be indemnified by the Selling Stockholder against certain liabilities, including certain liabilities under the Securities Act or the Exchange Act, that may arise from any written information furnished to us by the Selling Stockholder specifically for use in this prospectus.

We have agreed with the Selling Stockholder to cause the registration statement of which this prospectus constitutes a part to remain effective until such time as all of the shares covered by this prospectus have been sold or may be sold freely without limitations or restrictions as to volume or manner of sale pursuant to Rule 144 under the Securities Act. Once sold under the registration statement, of which this prospectus forms a part, the shares of Common Stock will be freely tradable, subject to the trading restrictions set forth in the APA, in the hands of persons other than our affiliates.

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## DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is not complete and may not contain all the information you should consider before investing in our capital stock. This description is summarized from, and qualified in its entirety by reference to, our Amended and Restated Certificate of Incorporation, as amended (our “Certificate of Incorporation”), which has been publicly filed with the SEC. See the section entitled “Where You Can Find More Information.”

We are currently authorized to issue an aggregate of:

- 250,000,000 shares of common stock, \$0.0001 par value (“Common Stock”); and
- 10,000,000 shares of preferred stock, \$0.0001 par value (“Preferred Stock”).

### Common Stock

As of June 22, 2021, there were 32,716,827 shares of Common Stock outstanding. Holders of our Common Stock are entitled to one vote per share for the election of directors and on all other matters that require stockholder approval. Holders of Common Stock do not have any cumulative voting rights. Subject to any preferential rights of any outstanding Preferred Stock, in the event of our liquidation, dissolution or winding up, holders of Common Stock are entitled to share ratably in the assets remaining after payment of liabilities and the liquidation preferences of any outstanding Preferred Stock. Our Common Stock does not carry any redemption rights or any preemptive or preferential rights enabling a holder to subscribe for, or receive shares of, any class of our Common Stock or any other securities convertible into shares of any class of our Common Stock.

### Dividends

We have never paid cash dividends on our Common Stock. Moreover, we do not anticipate paying periodic cash dividends on Common Stock for the foreseeable future. Any future determination about the payment of dividends will be made at the discretion of our board of directors and will depend upon its earnings, if any, capital requirements, operating and financial conditions and on such other factors as our board of directors deems relevant.

### Preferred Stock

We currently have no outstanding shares of Preferred Stock. Under our Certificate of Incorporation, our board of directors has the authority, without further action by stockholders, to designate one or more series of Preferred Stock and to fix the voting powers, designations, preferences, limitations, restrictions and relative rights granted to or imposed upon the Preferred Stock, including dividend rights, conversion rights, voting rights, rights and terms of redemption, liquidation preference and sinking fund terms, any or all of which may be preferential to or greater than the rights of our Common Stock.

Our board of directors may authorize the issuance of Preferred Stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of Common Stock. The issuance of Preferred Stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control and may adversely affect the market price of the Common Stock and the voting and other rights of the holders of Common Stock.

Our board of directors may specify the following characteristics of any Preferred Stock:

- the designation and stated value, if any, of the class or series of Preferred Stock;
- the number of shares of the class or series of Preferred Stock offered, and the liquidation preference, if any, per share;
- the dividend rate(s), period(s) or payment date(s) or method(s) of calculation, if any, applicable to the class or series of Preferred Stock;
- whether dividends, if any, are cumulative or non-cumulative and, if cumulative, the date from which dividends on the class or series of Preferred Stock will accumulate;
- the provisions for a sinking fund, if any, for the class or series of Preferred Stock;
- the provision for redemption, if applicable, of the class or series of Preferred Stock;

- the terms and conditions, if applicable, upon which the class or series of Preferred Stock will be convertible into Common Stock, including the conversion price or manner of calculation and conversion period;
- voting rights, if any, of the class or series of Preferred Stock;
- the relative ranking and preferences of the class or series of Preferred Stock as to dividend rights and rights, if any, upon the liquidation, dissolution or winding up of our affairs;
- any limitations on issuance of any class or series of Preferred Stock ranking senior to or on a parity with the class or series of Preferred Stock as to dividend rights and rights, if any, upon liquidation, dissolution or winding up of our affairs; and
- any other specific terms, preferences, rights, limitations or restrictions of the class or series of Preferred Stock.

#### **Registration Rights**

On January 27, 2021, we entered into the APA with NeuBase Corporation, our wholly owned subsidiary, and Vera Therapeutics, Inc. Pursuant to the terms of the APA, we acquired infrastructure, materials and intellectual property for peptide-nucleic acid (PNA) scaffolds from the Selling Stockholder for total consideration of approximately \$0.8 million in cash and 308,635 shares of common stock (of which 146,375 were to be issued to the Selling Stockholder and 162,260 will be held in escrow for the benefit of the Selling Stockholder and released to the Selling Stockholder in accordance with the terms of an escrow agreement between NeuBase Corporation and Vera, which agreement was entered into as of the closing of the transaction). The transaction closed on April 26, 2021, and we issued the Shares to the Selling Stockholder (or for the benefit of the Selling Stockholder) on that date.

In connection with the issuance and sale of the Shares, we granted certain registration rights with respect to the Shares, pursuant to the APA. As required by the APA, we agreed to, among other things, (i) file a registration statement under the Securities Act with the SEC to cover the resale of the Shares by the Selling Stockholder, (ii) use commercially reasonable efforts to cause such registration statement to become effective as soon as practicable after the filing thereof and (iii) keep such registration statement continuously effective in accordance with the terms of the APA. The registration statement of which this prospectus is a part relates to the resale of the Shares.

As required by the APA, we are registering 308,635 shares of Common Stock for resale pursuant to the registration statement of which this prospectus forms a part.

#### **Anti-Takeover Effects of Provisions of the Company’s Certificate of Incorporation and Delaware Law**

Certain provisions of Delaware law and our Certificate of Incorporation contain provisions that could make the following transactions more difficult: acquisition of our company by means of a tender offer; acquisition of our company by means of a proxy contest or otherwise; or removal of our incumbent officers and directors. It is possible that these provisions could make it more difficult to accomplish or could deter transactions that stockholders may otherwise consider to be in their best interest or in our best interests, including transactions that might result in a premium over the market price for our capital stock.

These provisions, summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of our company to first negotiate with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure our company outweigh the disadvantages of discouraging these proposals because negotiation of these proposals could result in an improvement of their terms.

##### *Delaware Anti-Takeover Statute*

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits persons deemed “interested stockholders” from engaging in a “business combination” with a publicly-held Delaware corporation for three years following the date these persons become interested stockholders unless the business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. Generally, an “interested stockholder” is a person who, together with affiliates and associates, owns, or within three years prior to the determination of interested stockholder status did own, 15% or more of a corporation’s voting stock. Generally, a “business combination” includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. The existence of this provision may have an anti-takeover effect with respect to transactions not approved in advance by the board of directors, such as discouraging takeover attempts that might result in a premium over the market price of the Common Stock.

##### *Undesignated Preferred Stock*

The ability to authorize undesignated Preferred Stock will make it possible for our board of directors to issue Preferred Stock with voting or other rights or preferences that could impede the success of any attempt to change control of the Company. These and other provisions may have the effect of deterring hostile takeovers or delaying changes in control or management of our company.

##### *Elimination of Stockholder Action by Written Consent*

Our Certificate of Incorporation eliminates the right of stockholders to act by written consent without a meeting.

#### *Classified Board; Election and Removal of Directors; Filling Vacancies*

Our board of directors are divided into three classes. The directors in each class serve for a three-year term, one class being elected each year by our stockholders, with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. At all meetings of stockholders for the election of directors, a plurality of the votes cast is sufficient to elect each director. Our Certificate of Incorporation provides for the removal of any of our directors only for cause and requires a stockholder vote by the holders of at least 66 2/3% of the voting power of the then outstanding voting stock. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of the board, may only be filled by a resolution of the board of directors unless the board of directors determines that such vacancies shall be filled by the stockholders. This system of electing and removing directors and filling vacancies may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of our company, because it generally makes it more difficult for stockholders to replace a majority of the directors.

#### *Choice of Forum*

Our Certificate of Incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the exclusive forum for: any derivative action or proceeding brought on our behalf; any action asserting a claim of breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our Certificate of Incorporation or our Amended and Restated Bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. Such exclusive forum provision, however, does not apply to suits brought to enforce any liability or duty created by the Securities Act or the Exchange Act. Although our Certificate of Incorporation contains the choice of forum provision described above, it is possible that a court could find that such a provision is inapplicable for a particular claim or action or that such provision is unenforceable.

#### *Amendment of Charter Provisions*

The amendment of any of the above provisions in our Certificate of Incorporation, except for the provision making it possible for our board of directors to issue undesignated Preferred Stock, would require approval by a stockholder vote by the holders of at least 66 2/3% of the voting power of the then outstanding voting stock.

The provisions of the Delaware General Corporation Law and our Certificate of Incorporation could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of the Common Stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

#### **Transfer Agent and Registrar**

The transfer agent and registrar for our Common Stock is Standard Registrar and Transfer Company. The transfer agent and registrar's address is 440 East 400 South, Suite 200, Salt Lake City, UT 84111.

#### **Listing**

Our Common Stock is listed on the Nasdaq Capital Market under the symbol "NBSE."

### **LEGAL MATTERS**

Unless otherwise indicated in the applicable prospectus supplement, the validity of the Common Stock offered by this prospectus, and any supplement thereto, will be passed upon for us by Paul Hastings LLP, Palo Alto, California.

### **EXPERTS**

The consolidated financial statements of NeuBase as of September 30, 2020 and 2019, and for each of the two years in the period ended September 30, 2020 incorporated by reference in this prospectus have been so incorporated in reliance on the report of Marcum LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

### **WHERE YOU CAN FIND MORE INFORMATION**

We are a reporting company and file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the shares of Common Stock being offered under this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the shares of Common Stock being offered under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. You may read and copy the registration statement, as well as our reports, proxy statements and other information. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including NeuBase Therapeutics, Inc. The SEC's Internet site can be found at [www.sec.gov](http://www.sec.gov).

### **DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES**

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and persons controlling us pursuant to the provisions described in Item 15 of the registration statement of which this prospectus forms a part or otherwise, we have been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable. In the event that a claim for indemnification against such liabilities (other than our payment of expenses incurred or paid by our directors, officers, or controlling persons in the successful defense of any action, suit, or proceeding) is asserted by our directors, officers, or controlling persons in connection with the Common Stock being registered, we will, unless in the opinion of our counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by us is against public policy as expressed in the Securities Act and will be governed by the final adjudication of the issue.

The SEC allows us to “incorporate by reference” information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The documents incorporated by reference into this prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this prospectus:

- (a) [The Registrant’s Annual Report on Form 10-K for the fiscal year ended September 30, 2020, filed with the SEC on December 23, 2020](#)
- (b) [The Registrant’s Quarterly Report on Form 10-Q for the quarter ended December 31, 2020, filed with the SEC on February 11, 2021](#)
- (c) [The Registrant’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2021, filed with the SEC on May 14, 2021](#)
- (d) The Registrant’s Current Reports on Form 8-K filed with the SEC on (i) [October 6, 2020](#), (ii) [December 2, 2020](#), (iii) [December 16, 2020](#) (other than with respect to information furnished under Item 7.01 therein); (iv) [March 26, 2021](#); (v) [April 22, 2021](#); (vi) [April 26, 2021](#); (vii) [April 27, 2021](#); (viii) [April 30, 2021](#); (ix) [May 12, 2021](#); (x) [May 20, 2021](#); and (xi) [May 25, 2021](#); and
- (e) [The description of the Registrant’s common stock set forth in Exhibit 4.5 the Registrant’s Annual Report on Form 10-K for the year ended September 30, 2019 \(File No. 001-35963\), filed with the SEC on January 10, 2020, including any amendments or reports filed for the purpose of updating such description.](#)

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus forms a part and prior to effectiveness of such registration statement, until we file a post-effective amendment that indicates the termination of the offering of the shares of Common Stock made by this prospectus and such future filings will become a part of this prospectus from the respective dates that such documents are filed with the SEC. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes hereof or of the related prospectus supplement to the extent that a statement contained herein or in any other subsequently filed document which is also incorporated or deemed to be incorporated herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

Documents incorporated by reference are available from us, without charge. You may obtain documents incorporated by reference in this prospectus by requesting them in writing or by telephone at the following address:

NeuBase Therapeutics, Inc.  
350 Technology Drive  
Pittsburgh, PA 15219  
(646) 450-1790

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**neubase**

**NEUBASE THERAPEUTICS, INC.**

**308,635 SHARES OF COMMON STOCK**

**PROSPECTUS**

\_\_\_\_\_, 2021

Neither we nor the Selling Stockholder have authorized any dealer, salesperson or other person to give any information or to make any representations not contained in this prospectus or any prospectus supplement. You must not rely on any unauthorized information. This prospectus is not an offer to sell these securities in any jurisdiction where an offer or sale is not permitted. The information in this prospectus is current as of the date of this prospectus. You should not assume that this prospectus is accurate as of any other date.

## INFORMATION NOT REQUIRED IN PROSPECTUS

### Item 14. Other Expenses of Issuance and Distribution

The following table sets forth all expenses payable by the Registrant in connection with the sale of the common stock being registered. The security holders will not bear any portion of such expenses. All the amounts shown are estimates except for the registration fee.

SEC registration fee	\$ 169.21
Legal fees and expenses	75,000.00
Accounting fees and expenses	10,000.00
Printing, transfer agent fees and miscellaneous expenses	5,000.00
Total	\$ 90,169.21

### Item 15. Indemnification of Directors and Officers

The Registrant is a Delaware corporation. Reference is made to Section 102(b)(7) of the General Corporation Law of the State of Delaware (the "DGCL"), which enables a corporation in its original certificate of incorporation or an amendment thereto to eliminate or limit the personal liability of a director for violations of the director's fiduciary duty, except (1) for any breach of the director's duty of loyalty to the corporation or its stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) pursuant to Section 174 of the DGCL (providing for liability of directors for unlawful payment of dividends or unlawful stock purchase or redemptions), or (4) for any transaction from which a director derived an improper personal benefit.

Reference also is made to Section 145 of the DGCL, which provides that a corporation may indemnify any persons, including officers and directors, who are, or are threatened to be made, parties to any threatened, pending or completed legal action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person was an officer, director, employee or agent of such corporation or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided such officer, director, employee or agent acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interest and, for criminal proceedings, had no reasonable cause to believe that his or her conduct was unlawful. A Delaware corporation may indemnify officers and directors in an action by or in the right of the corporation under the same conditions, except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him against the expenses that such officer or director actually and reasonably incurred.

The Registrant's Amended and Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation"), eliminates the personal liability of directors to the fullest extent permitted by the DGCL and provides that the Registrant (1) shall indemnify and advance expenses to any person made or threatened to be made a party to an action, suit or proceeding, whether criminal, civil, administrative or investigative, by reason of the fact that he or she, or his or her testator or intestate, is or was a director or officer of the Registrant or any predecessor of the Registrant, or serves or served at any other enterprise as a director or officer at the request of the Registrant or any predecessor of the Registrant and (2) may indemnify and advance expenses to any person made or threatened to be made a party to an action, suit or proceeding, whether criminal, civil, administrative or investigative, by reason of the fact that he or she, or his or her testator or intestate, is or was an employee or agent of the Registrant or any predecessor of the Registrant, or serves or served at any other enterprise as an employee or agent at the request of the Registrant or any predecessor to the Registrant.

The Registrant has an insurance policy that insures its directors and officers, within the limits and subject to the limitations of the policy, against certain expenses in connection with the defense of actions, suits or proceedings, and certain liabilities that might be imposed as a result of such actions, suits or proceedings, to which they are parties by reason of being or having been directors or officers.

The Registrant has indemnification agreements with each of its directors and executive officers that may be broader than the specific indemnification provisions contained in the DGCL. These indemnification agreements require the Registrant, among other things, to indemnify a director or officer, to the fullest extent permitted by applicable law, for certain expenses, including attorneys' fees, judgments, penalties, fines and settlement amounts actually and reasonably incurred by them in any action or proceeding arising out of their services as one of a director or officer of the Registrant, or any of the Registrant's subsidiaries or any other company or enterprise to which the person provides services at the Registrant's request, including liability arising out of negligence or active or passive misconduct by the director or officer. The Registrant believes that these agreements are necessary to attract and retain qualified individuals to serve as directors and executive officers.

### Item 16. Exhibits

Exhibit Number	Description of Document
<a href="#">2.1</a>	<a href="#">Agreement and Plan of Merger and Reorganization, dated as of January 2, 2019, by and among the Registrant, Ohr Acquisition Corp. and NeuBase Therapeutics, Inc. (incorporated herein by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K, filed on January 3, 2019)</a>
<a href="#">2.2</a>	<a href="#">First Amendment to the Agreement and Plan of Merger and Reorganization, dated as of June 27, 2019, by and among the Registrant, Ohr Acquisition Corp. and NeuBase Therapeutics, Inc. (incorporated herein by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K, filed on July 3, 2019)</a>
<a href="#">4.1</a>	<a href="#">Form of Consulting Warrants (incorporated herein by reference to Exhibit 10.21 to the Registrant's Quarterly Report on Form 10-Q, for the fiscal quarter ended June 30, 2011, filed on August 15, 2011)</a>
<a href="#">4.2</a>	<a href="#">Form of Series A Warrant (incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed on December 8, 2016)</a>
<a href="#">4.3</a>	<a href="#">Form of Warrant (incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed on April 6, 2017)</a>
<a href="#">4.4</a>	<a href="#">Form of Common Stock Certificate</a>
<a href="#">4.5*</a>	<a href="#">Form of Warrant</a>
<a href="#">5.1*</a>	<a href="#">Opinion of Paul Hastings LLP</a>
<a href="#">23.1*</a>	<a href="#">Consent of Marcum LLP, Independent Registered Public Accounting Firm</a>
<a href="#">23.3*</a>	<a href="#">Consent of Paul Hastings LLP (included in Exhibit 5.1)</a>

\* Filed herewith.

**Item 17. Undertakings**

The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

*Provided, however, that:*

Paragraphs (1)(i), (1)(ii) and (1)(iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

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(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(6) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

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**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Pittsburgh, State of Pennsylvania, on June 23, 2021.

**NEUBASE THERAPEUTICS, INC.**

By: /s/ Dietrich A. Stephan  
Dr. Dietrich A. Stephan  
*President and Chief Executive Officer*

**POWER OF ATTORNEY**

**Know All Persons By These Presents**, that each person whose signature appears below constitutes and appoints Dr. Dietrich Stephan and Sam Backenroth, and each or any one of them, and that Dr. Dietrich Stephan constitutes and appoints Mr. Sam Backenroth, and that Mr. Sam Backenroth constitutes and appoints Dr. Dietrich Stephan, as his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and

confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<b>Signature</b>	<b>Title</b>	<b>Date</b>
<hr/> <i>/s/ Dietrich A. Stephan</i> Dr. Dietrich A. Stephan	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	June 23, 2021
<hr/> <i>/s/ Sam Backenroth</i> Sam Backenroth	Chief Financial Officer, Treasurer and Secretary <i>(Principal Financial and Accounting Officer)</i>	June 23, 2021
<hr/> <i>/s/ Dov A. Goldstein</i> Dr. Dov A. Goldstein	Director	June 23, 2021
<hr/> <i>/s/ Eric I. Richman</i> Eric I. Richman	Director	June 23, 2021
<hr/> <i>/s/ Franklyn G. Prendergast</i> Dr. Franklyn G. Prendergast	Director	June 23, 2021
<hr/> <i>/s/ Gerry McDougal</i> Gerry McDougall	Director	June 23, 2021

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## COMMON STOCK PURCHASE WARRANT

## NEUBASE THERAPEUTICS, INC.

Warrant Shares:

Issue Date: July \_\_\_\_, 2020

Initial Exercise Date: August \_\_\_\_, 2020

THIS COMMON STOCK PURCHASE WARRANT (the “Warrant”) certifies that, for value received, or its assigns (the “Holder”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the Issue Date (the “Initial Exercise Date”) and on or prior to 5:00 p.m. (New York City time) on July \_\_\_\_, 2023<sup>1</sup> (the “Termination Date”) but not thereafter, to subscribe for and purchase from NeuBase Therapeutics, Inc., a Delaware corporation (the “Company”), up to 105,000 shares of the Company’s Common Stock (as subject to adjustment hereunder, the “Warrant Shares”); provided that this Warrant may only be exercised for Warrant Shares that are deemed Vested under this Warrant. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Agreement. This Warrant is being issued pursuant to that certain Investment Banking Advisory Engagement Agreement, dated July \_\_\_\_, 2020, by and between the Company and Holder (as may be amended or restated from time to time, the “Agreement”).

Section 2. Exercise.

a) Exercise of Warrant. Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date with respect to Warrant Shares that are deemed Vested and on or before the Termination Date by delivery to the Company of a duly executed PDF copy submitted by email (or email attachment) of the Notice of Exercise in the form annexed hereto (the “Notice of Exercise”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(c)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.** For purposes of this Warrant, “Trading Day” means any day on which the Company’s Common Stock is purchased and sold on the principal market on which the Common Stock is listed or quoted (the “Trading Market”).

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<sup>1</sup> Three years from issue date.

b) Exercise Price. The exercise price per share of Common Stock under this Warrant shall be \$[\_\_\_\_], subject to adjustment hereunder (the “Exercise Price”).

c) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by physical delivery of a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the “Warrant Share Delivery Date”). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. As used herein, “Standard Settlement Period” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

iv. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and

such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

v. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

d) Vested Warrants. The Warrant Shares shall vest and be deemed vested as follows (“Vested”): on the Initial Exercise Date, 17,500 of the Warrant Shares shall vest and on the [ ] day of each month thereafter, an additional 17,500 of the Warrant Shares shall vest; *provided that* Warrant Shares shall only vest on a scheduled vesting date if the Agreement has not been terminated by Holder prior to such scheduled vesting date, as applicable.

### Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

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b) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

c) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by email to the Holder at its last email address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

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### Section 4. Transfer of Warrant.

a) Transferability. This Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be

dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the "Warrant Register"), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(c).

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Trading Day, then, such action may be taken or such right may be exercised on the next succeeding Trading Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

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Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of Pennsylvania, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Warrant (whether brought against a party hereto or their respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of Pittsburgh. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of Pittsburgh, State of Pennsylvania for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding.

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f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by email, or sent by a nationally recognized overnight courier service, addressed to the Company, at NeuBase Therapeutics, Inc., 700 Technology Drive, Pittsburgh, PA 15219, Attention: Chief Financial Officer, email address: sbackenroth@neubasetherapeutics.com, or such other number, email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or

deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by email, or sent by a nationally recognized overnight courier service addressed to each Holder at the email address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via email at the email address set forth in this Section prior to 5:30 p.m. (New York City) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via email at the email address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

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j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and the Holder, on the other hand.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

\*\*\*\*\*

*(Signature Page Follows)*

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IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

**NEUBASE THERAPEUTICS, INC.**

By: \_\_\_\_\_  
Name: Dietrich Stephan, Ph.D.  
Title: Chief Executive Officer

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**NOTICE OF EXERCISE**

TO: NEUBASE THERAPEUTICS, INC.

(1) The undersigned hereby elects to purchase \_\_\_\_\_ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

\_\_\_\_\_

The Warrant Shares shall be delivered to the following address:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[SIGNATURE OF HOLDER]

Name of Investing Entity: \_\_\_\_\_

Signature of Authorized Signatory of Investing Entity: \_\_\_\_\_

Name of Authorized Signatory: \_\_\_\_\_  
Title of Authorized Signatory: \_\_\_\_\_  
Date: \_\_\_\_\_

**ASSIGNMENT FORM**

*(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)*

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: \_\_\_\_\_ (Please Print)

Address: \_\_\_\_\_ (Please Print)

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Dated: \_\_\_\_\_, \_\_\_\_\_

Holder's Signature: \_\_\_\_\_

Holder's Address: \_\_\_\_\_

# PAUL HASTINGS

June 23, 2021

NeuBase Therapeutics, Inc.  
350 Technology Drive  
Pittsburgh, PA 15219

Re: NeuBase Therapeutics, Inc. Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to NeuBase Therapeutics, Inc., a Delaware corporation (the “*Company*”), in connection with the preparation and filing by the Company of a Registration Statement on Form S-3 (the “*Registration Statement*”) with the U.S. Securities and Exchange Commission (the “*Commission*”) under the Securities Act of 1933, as amended (the “*Securities Act*”), on or about the date hereof, with respect to the resale from time to time by the selling stockholder of the Company, as detailed in the Registration Statement (the “*Selling Stockholder*”), of up to 308,635 shares (the “*Shares*”) of the Company’s common stock, par value \$0.0001 per share (“*Common Stock*”), issued by the Company to the Selling Stockholder pursuant to that certain Asset Purchase Agreement, dated as of January 27, 2021, by and among the Company, NeuBase Corporation, a wholly-owned subsidiary of the Company, and Vera Therapeutics, Inc. (as amended, the “*Purchase Agreement*”).

As such counsel and for purposes of our opinion set forth below, we have examined and relied upon originals or copies, certified or otherwise identified to our satisfaction, of such documents, resolutions, certificates and other instruments of the Company and corporate records furnished to us by the Company, and have reviewed certificates of public officials, statutes, records and such other instruments and documents as we have deemed necessary or appropriate as a basis for the opinion set forth below, including, without limitation:

- (i) the Registration Statement;
- (ii) the Amended and Restated Certificate of Incorporation of the Company, as amended from time to time, as certified as of June 23, 2021 by the Office of the Secretary of State of the State of Delaware;
- (iii) the Amended and Restated Bylaws of the Company as presently in effect, as certified by an officer of the Company as of June 23, 2021;
- (iv) the Purchase Agreement;
- (v) a certificate, dated as of June 23, 2021, from the Office of the Secretary of State of the State of Delaware as to the existence and good standing of the Company in the State Delaware (the “*Good Standing Certificate*”); and
- (vi) the resolutions adopted by the Company’s board of directors on January 19, 2021, certified by an officer of the Company, relating to the approval of the terms of the Purchase Agreement and other matters.

Paul Hastings LLP | 1117 S. California Avenue | Palo Alto, California 94304  
t: +1.650.320.1800 | www.paulhastings.com

# PAUL HASTINGS

NeuBase Therapeutics, Inc.  
June 23, 2021  
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In addition to the foregoing, we have made such investigations of law as we have deemed necessary or appropriate as a basis for the opinion set forth in this opinion letter.

In such examination and in rendering the opinion expressed below, we have assumed, without independent investigation or verification: (i) the genuineness of all signatures on all agreements, instruments, corporate records, certificates and other documents submitted to us; (ii) the authenticity and completeness of all agreements, instruments, corporate records, certificates and other documents submitted to us as originals; (iii) that all agreements, instruments, corporate records, certificates and other documents submitted to us as certified, electronic, facsimile, conformed, photostatic or other copies conform to originals thereof, and that such originals are authentic and complete; (iv) the legal capacity and authority of all persons or entities (other than the Company) executing all agreements, instruments, corporate records, certificates and other documents submitted to us; (v) the due authorization, execution and delivery of all agreements, instruments, corporate records, certificates and other documents by all parties thereto (other than the Company); (vi) that no documents submitted to us have been amended or terminated orally or in writing except as has been disclosed to us in writing; (vii) that the statements contained in the certificates and comparable documents of public officials, officers and representatives of the Company and other persons on which we have relied for the purposes of this opinion letter are true and correct; (viii) that there has not been any change in the good standing status of the Company from that reported in the Good Standing Certificate; and (ix) that each of the officers and directors of the Company has properly exercised his or her fiduciary duties. As to all questions of fact material to this opinion letter, and as to the materiality of any fact or other matter referred to herein, we have relied (without independent investigation or verification) upon representations and certificates or comparable documents of officers and representatives of the Company. Our knowledge of the Company and its legal and other affairs is limited by the scope of our engagement, which scope includes the delivery of this opinion letter. We do not represent the Company with respect to all legal matters or issues. The Company may employ other independent counsel and, to our knowledge, handles certain legal matters and issues without the assistance of independent counsel.

Based upon the foregoing, and in reliance thereon, and subject to the assumptions, limitations, qualifications and exceptions set forth herein, we are of the opinion that the Shares are validly issued, fully paid and nonassessable.

Without limiting any of the other limitations, exceptions and qualifications stated elsewhere herein, we express no opinion with regard to the applicability or effect of the laws of any jurisdiction other than the General Corporation Law of the State of Delaware, as in effect on the date of this opinion letter.

This opinion letter deals only with the specified legal issues expressly addressed herein, and you should not infer any opinion that is not explicitly stated herein from any matter addressed in this opinion letter.

This opinion letter is rendered solely in connection with the registration of the Shares for resale by the Selling Stockholder under the Registration Statement. This opinion letter is rendered as of the date hereof, and we assume no obligation to advise you or any other person with regard to any change after the date hereof in the circumstances or the law that may bear on the matters set forth herein after the effectiveness of the Registration Statement, even if the change may affect the legal analysis or a legal conclusion or other matters in this opinion letter.

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**PAUL**  
HASTINGS

NeuBase Therapeutics, Inc.  
June 23, 2021  
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We hereby consent to the filing of this opinion letter as Exhibit 5.1 to the Registration Statement and to the reference to our firm in the Registration Statement under the heading "Legal Matters." In giving such consent, we do not hereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules or regulations of the Commission thereunder.

Very truly yours,

/s/ Paul Hastings LLP

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INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in this Registration Statement of NeuBase Therapeutics, Inc. on Form S-3 of our report dated December 23, 2020, with respect to our audits of the consolidated financial statements of NeuBase Therapeutics, Inc. as of September 30, 2020 and 2019 and for the years ended September 30, 2020 and 2019 appearing in the Annual Report on Form 10-K of NeuBase Therapeutics, Inc. for the year ended September 30, 2020. We also consent to the reference to our firm under the heading "Experts" in the Prospectus, which is part of this Registration Statement.

/s/ Marcum llp

Marcum llp  
New York, NY  
June 23, 2021

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