

Pliant Therapeutics, Inc.

COMMON STOCK VALUATION

AS OF JULY 31, 2018

*Report Date: August 31, 2018*



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August 31, 2018

Dr. Bernard Coulie

Chief Executive Officer

Pliant Therapeutics, Inc.

700 Saginaw Dr, Suite 150

Redwood City, CA 94063

Dear Dr. Coulie:

In response to the engagement letter, RNA Advisors, LLC dba RNA Capital Advisors (“RNA” or “we”) has completed an analysis of Pliant Therapeutics, Inc. (“Pliant Therapeutics” or the “Company”) as of July 31, 2018 (the “Valuation Date”), to determine the fair market value and fair value of the Company’s common stock (“Common Stock”) on a non-marketable, minority interest basis.

Please note that this letter along with the following report (the “Report”), exhibits (individually an “Exhibit” and collectively the “Exhibits”) and their conclusions (jointly, the “Valuation” or the “Opinion”) are intended for the use of the management and Board of Directors of the Company (“Management”). This analysis has been performed in recognition of Internal Revenue Code Section 409A (“IRC 409A”) and FASB Accounting Standards Codification Topic 718 – Stock Compensation (“ASC 718”) (formerly known as Statement of Financial Accounting Standards No. 123R, Accounting for Share-Based Payment (“FAS 123R”)). We make no representation as to the accuracy of this Valuation if it is used for any other purpose without the written consent of RNA. This Opinion should not be considered, in whole or in part, as investment advice by anyone. This valuation engagement was conducted in accordance with the Statement of Standards for Valuation Services No.1 of the American Institute of Certified Public Accountants (“AICPA”).

This analysis uses the methods and techniques outlined in the AICPA Audit and Accounting Practice Aid entitled Valuation of Privately-Held-Company Equity Securities Issued as Compensation, second edition (the “Practice Aid”), which are relevant to the valuation of the Common Stock.

The definition of fair market value is predicated on IRS Revenue Ruling 59-60.

This cover letter provides an overview of the purpose and scope of the analysis and its conclusions. Please refer to the attached Report below for a discussion and presentation of the analysis performed in connection with this engagement.

SUMMARY OF FINDINGS:

Based upon the information and financial data provided, and representations made by Management, as well as the analyses performed, it is our opinion that the fair market value and the fair value of the Common Stock on a non-marketable, minority interest basis as of the Valuation Date is reasonably stated as follows:

$0.29 (TWENTY-NINE CENTS) per Share

The conclusions and opinions expressed in this letter and the accompanying Report are contingent upon the qualifying factors set forth in the Statement of Limiting Conditions and throughout the completed Report.

If you have any questions concerning this Report, please contact me at 925.940.0220.

Sincerely,

**RNA Capital Advisors**



Sam Renwick, CFA

*Primary Valuation Analyst*

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Engagement Overview

Purpose

RNA has completed an analysis of the Company as of the Valuation Date to determine both the fair market value and the fair value of the Common Stock on a non-marketable, minority interest basis. This analysis has been performed in recognition of IRC 409A and ASC 718. This analysis uses the methods and techniques outlined in the Practice Aid, which are relevant to the valuation of the Common Stock.

Scope

RNA has based this Opinion on information provided and represented by Management. Our review and analysis included, but was not necessarily limited to, the following steps:

1. Reviewed the Previous Valuation report (defined below);
2. Discussed the expected operations, financial condition, and future prospects with Management in order to understand the performance of the Company;
3. Reviewed the Company’s financial statements for the years ended December 31, 2015 to December 31, 2017, and interim financial statements for the five months ending May 31, 2018;
4. Reviewed consolidated forecasts and projections prepared by Management for the Company;
5. Reviewed a capitalization summary of the Company as prepared by Management;
6. Reviewed a copy of the Company's Articles of Incorporation;
7. Reviewed copies of certain documents pertaining to various securities underlying the Company's capital structure, such as preferred and common stock;
8. Reviewed certain publicly available financial data for companies that we deemed comparable to the Company;
9. Conducted research concerning the economic conditions and outlook for the US economy generally as of the Valuation Date; and
10. Conducted other studies, analyses and inquiries, as we deemed appropriate.

RNA did not independently verify the information provided; therefore, the validity of our Opinion depends on the completeness and accuracy of the information provided to RNA by Management. Management warranted to RNA that the information supplied was complete and accurate to the best of its knowledge. Information furnished by the Company and others, upon which all or portions of our Opinion are based, is believed to be reliable and we have assumed that all facts and circumstances that would significantly affect the results of the Valuation have been disclosed to us. However, RNA provides no warranty as to the accuracy of such information. Our fee for this service is not contingent upon the Valuation expressed herein.

Key Definitions

The terms “αVβ1” and “αVβ6”, as used herein, refer to different types of integrin inhibitors being developed by the Company.

The term “CAGR”, as used herein, refers to compound annual growth rate.

The term “DC”, as used herein, refers to development candidate.

The term “DCF”, as used herein, refers to discounted cash flow method.

The term “DLOM”, as used herein, refers to discount for lack of marketability.

The term “DMD”, as used herein, refers to duchenne muscular dystrophy.

The term “EMT”, as used herein, refers to the epithelial-to-mesenchymal transition.

The term “FDA”, as used herein, refers to the US Food and Drug Administration.

The term “IND”, as used herein, refers to an investigational new drug (usually in the context of a filing).

The term “IPF”, as used herein, refers to idiopathic pulmonary fibrosis.

The term “IP”, as used herein, refers to intellectual property.

The term “IPO”, as used herein, refers to an initial public offering.

The term “LAMEA”, as used herein, refers to countries like Latin America, Middle East and Africa collectively.

The term “M&A”, as used herein, refers to mergers and acquisitions.

The term “NASH”, as used herein, refers to non-alcoholic steatohepatitis.

The term “NPV”, as used herein, refers to net present value.

The term “ob”, as used herein, refers to obese mouse.

The term “PCT”, as used herein, refers to patent cooperation treaty.

The term “PSC”, as used herein, refers to primary sclerosing cholangitis.

The term “Previous Valuation”, as used herein, refers to the valuation of Common Stock performed by RNA as of September 30, 2016.

The term “R&D”, as used herein, refers to research and development.

The term “rNPV”, as used herein, refers to risk-adjusted net present value.

The term “TGF-β”, as used herein, refers to transforming growth factor beta.

The term “UC”, as used herein, refers to the University of California.

The term “US”, as used herein, refers to the United States of America and its major territories.

The term “USD”, as used herein, refers to US Dollars. Unless otherwise noted, all currency figures in this Opinion are expressed in USD.

Standard of Value

Definition of Fair Market Value

For tax purposes, the appropriate standard of value is fair market value, which is defined as:

“The price, expressed in terms of cash equivalents, at which such property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms’ length in an open and unrestricted market, when neither is under compulsion to buy or to sell, and when both have reasonable knowledge of relevant facts.”[[1]](#footnote-1)

Definition of Fair Value

For financial reporting purposes, the appropriate standard of value is fair value, which is defined as:

“The amount at which an asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale.”[[2]](#footnote-2)

According to the May 7, 2003 FASB Board meeting, the above definition of fair value may be consistent with the definition of fair market value in Internal Revenue Ruling 59-60. RNA is not aware of any facts that would cause a difference in the conclusions on a fair market value basis compared with fair value. As such, it is not unreasonable that the conclusion of fair value for financial reporting purposes ought to be consistent with fair market value for tax reporting purposes.

Company Overview

Background

Pliant Therapeutics is an early-stage biotechnology company focused on discovering, developing and commercializing treatments for fibrotic diseases by harnessing the therapeutic potential of integrin biology and TGF-β modulation. The Company focuses on preventing and reversing fibrosis to address the needs of the patients. It plans to build a patient registry for certain areas of fibrotic disease to increase the understanding of natural disease progression and to fuel biomarker discovery. The Company was founded by researchers from UC, San Francisco, with experience in fibrosis biology and small molecule chemistry.[[3]](#footnote-3)

Product Pipeline

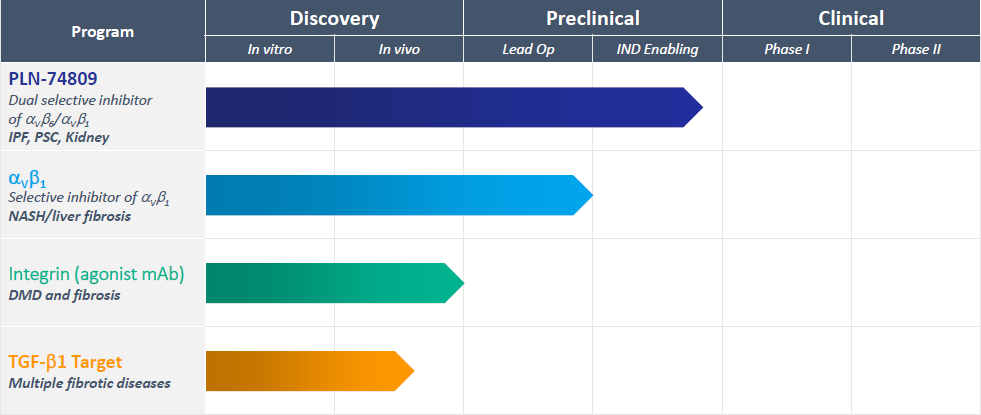
The Company combines the expertise in TGF-β and integrin biology, medicinal chemistry, screening technology, and clinical insight to develop tissue specific inhibitors of fibrotic diseases. The Company’s product engine addresses the needs of patients by targeting fibrosis in a variety of organs and conditions, including the lungs (IPF), liver (NASH, cirrhosis, and PSC), kidney (renal fibrosis), skin (scleroderma), heart (cardiac fibrosis) and the gastrointestinal tract (Crohn’s disease). The Company is entering the fibrosis space initially targeting IPF as the available courses of treatment are scarce and there are currently no options on the market proven to influence long-term patient survival or symptomatology.

In contrast to the current FDA approved therapies that treat symptoms of fibrotic disorders, the Company is targeting the two key mechanisms underlying the process of fibrosis, which are TGF-β activation and EMT. TGF- β is a key regulator of physiological healing and pathologic fibrosis, while EMT is the main driver for the inappropriate generation of activated fibroblasts from normal epithelial cells. The dual approach of tissue-specific TGF-β antagonism and EMT inhibition provides a novel and potentially synergistic therapeutic option to treat fibrotic disorders.[[4]](#footnote-4)

As of the Valuation Date, the Company has seven active drug programs in its pipeline. The statuses of the most developed programs in the pipeline are noted below:[[5]](#footnote-5)

1. **PLN-74809:** It is the Company’s lead program, a dual selective, oral bio-available small molecule inhibitor of the αVβ1 and αVβ6 integrins. The primary indications for PLN-74809 will be IPF, PSC and renal fibrosis. Relative to the Previous Valuation, the Company selected PLN-74809 as the lead program and expects to file an IND application by the end of 2018 with safety and clinical proof of concept readouts in 2019;
2. **αVβ1:** The Company’s secondary program is a selective inhibitor of αVβ1 targeting NASH and liver fibrosis. As of the Valuation Date, the secondary program is in the lead optimization stage and the Company plans to select the DC bythe end of 2018 followed by an IND application by the end of 2019; and
3. **Other Programs:** The Company plans to develop new IP antibody for DMD. As of the Valuation Date, animal studies are ongoing. The Company plans to file an IND application in early 2020. Other programs in the pipeline are in the discovery stage.

*Figure 1: Product Pipeline and Development Timeline*



Recent Developments

1. On July 10, 2018, the Company raised $62.1 million in Series B first tranche (“Series B Tranche I”) to support the IND application and clinical trials of IPF and PSC, as well as ongoing drug discovery programs targeting other fibrotic diseases. The financing round was led by Cowen Healthcare Investments (“Cowen”). Concurrent to the financing, Mr. Kevin Raidy, Managing Partner of Cowen has joined the Company’s Board of Directors (“BOD”);[[6]](#footnote-6) and
2. On May 8, 2018, the Company appointed Dr. Hoyoung Huh as the Chairman of the BOD and Dr. Éric Lefebvre, M.D. as the Chief Medical Officer (“CMO”).[[7]](#footnote-7)

Intellectual Property[[8]](#footnote-8)

A summary of the Company’s IP portfolio for αVβ1 andαVβ6 is presented below:

1. Patent titled “N-Acyl Amino acid compounds and methods of use”, application number 15/698435, filed on September 7, 2017;[[9]](#footnote-9)
2. Pending PCT application titled “Anti-αVβ1 Integrin Compounds and Methods” for worldwide rights, exclusively licensed for therapeutic and prophylactic use in humans and animals;
3. Pending PCT application titled “Anti-αVβ1 Integrin Inhibitors and Methods of Use” for worldwide rights, exclusively licensed for therapeutic and prophylactic use in humans and animals;
4. Provisional application pending, titled “N-Acyl Amino Acid Compounds and Methods of Use” for worldwide rights, exclusively owned in all fields; and
5. Provisional application under preparation, titled “Anti-αVβ6 Integrin Compounds and Methods” for worldwide rights, exclusively owned in all fields.

In addition to the above, the Company owns the domain name “pliantrx.com” and has filed for a trademark with the United States Patent Trademark Office, for “Pliant Therapeutics”.

Management Team[[10]](#footnote-10)

Key members of the Management team are:

**Bernard Coulie, M.D., Ph.D. – *President and* *Chief Executive Officer (“CEO”)***

Dr. Coulie has more than 15 years of senior leadership experience and drug development expertise. He joined the Company from ActoGeniX Therapeutics (“ActoGeniX”, acquired by Intrexon Corporation in February 2015), where he was CEO, CMO and co-Founder. In these positions, Dr. Coulie played an integral role in advancing the company’s unique technology platform for oral delivery of biologics from early discovery stage through Phase II clinical trials. Prior to ActoGeniX, Dr. Coulie held various positions with increasing responsibilities in drug discovery and clinical development at Johnson & Johnson (“J&J”) Pharmaceutical Research and Development Europe. At J&J, he served as Therapeutic Area Leader Internal Medicine, managing a portfolio of products in gastrointestinal, metabolic diseases and inflammation/immunology, ranging from early drug discovery through Phase II clinical trials. Dr. Coulie was a Staff Physician in the Department of Gastroenterology and Hepatology at Mayo Clinic (Rochester, State of Minnesota), Assistant Professor in Medicine at Mayo Medical School and a Mayo Foundation scholar.

Dr. Coulie holds an M.D. and a Ph.D. from the University of Leuven, Belgium. He is a board-certified internist and he holds a Master of Business Administration (“M.B.A.”) from the Vlerick Management School, Leuven, Belgium.

**Éric Lefebvre, M.D. – *CMO***

Dr. Lefebvre is responsible for leading the Company’s Clinical Development Strategy and Clinical Operations for its portfolio of product candidates. Prior to joining the Company, Dr. Lefebvre was Head of Clinical R&D for NASH at Allergan plc (“Allergan”), where he advanced cenicriviroc for the treatment of patients with NASH into Phase III clinical trials. Previously, he was CMO at Tobira Therapeutics, Inc., whose focus was the development and commercialization of therapies to treat liver disease, inflammation, fibrosis and human immunodeficiency virus (“HIV”), prior to the company being acquired by Allergan in 2016. Dr. Lefebvre also led Global Clinical Development, Global Medical Affairs and commercialization of novel treatments for HIV and hepatitis C at Janssen Pharmaceuticals, Inc. for 10 years prior to starting his pharmaceutical career at GlaxoSmithKline plc (“GSK”). This was preceded by 15 years of providing primary care and conducting clinical research in HIV and hepatitis at Clinique Medicale L’Actuel in Canada.

Dr. Lefebvre earned a Bachelor of Science (“B.S.”) from Edouard-Montpetit College and an M.D. from the University of Montreal.

**Katerina Leftheris, Ph.D. – *Vice President (“VP”) of Chemistry***

Dr. Leftheris has over 20 years of small molecule drug discovery and development experience, primarily in immunology, oncology, metabolic disease and neurodegeneration. Previously, Dr. Leftheris was site-head of Discovery Chemistry for Celgene Corporation (“Celgene”), San Diego, where she led the Chemistry team in advancing five novel clinical candidates in immunology and oncology. Prior to joining Celgene, Dr. Leftheris was the Senior Director of Vitae Pharmaceuticals, Inc. where she expanded the Chemistry team and led several small molecule programs in the metabolic disease area. Dr. Leftheris held positions of increasing responsibility in Discovery Chemistry at Bristol-Myers Squibb Company (“BMS”) and also has over 110 publications and issued patents.

Dr. Leftheris received her Bachelor of Arts (“B.A.”) degree in Chemistry from Smith College, Ph.D. in Organic Chemistry from the UC, San Diego and completed postdoctoral studies at the University of Pennsylvania.

**Hans Hull, J.D. – *Chief Business Officer***

Mr. Hull is an accomplished biotechnology executive who has more than 15 years of experience in corporate development, legal and operational roles. Mr. Hull was previously the interim CEO of Avalanche Biotechnologies, Inc. (“Avalanche”), after serving as a Senior VP of Business Operations for the company. During his tenure at Avalanche, he closed multiple transactions including an eight-product, $640.0 million collaboration with Regeneron Pharmaceuticals, Inc. and helped raise more than $300.0 million in private and public equity financing. Prior to Avalanche, Mr. Hull was the CEO of Orthobond Corp., following an earlier career as an IP Attorney at Heller Ehrman LLP and a Life Science Consultant at ZS Associates, Inc.

**David Morgans, Ph.D. – *VP of Drug Discovery and Early Development***

Dr. Morgans, Jr. has more than 25 years of experience in drug discovery and development of small molecules. Previously, he served as a Consultant for the biotech and pharmaceutical companies. Prior to becoming a Consultant, he served in a variety of executive roles in R&D and general management at Cytokinetics, Incorporated (“Cytokinetics”). While at Cytokinetics, Dr. Morgans built and led an integrated preclinical R&D organization to provide five novel drug candidates for clinical studies for potential treatment of cancer, heart failure, amyotrophic lateral sclerosis, and other skeletal muscle disorders. Prior to Cytokinetics, Dr. Morgans served as the VP of Research for Iconix Pharmaceuticals, Inc. and the VP of Inflammatory Diseases at Roche Bioscience. Earlier, Dr. Morgans held various positions at Syntex Corporation and was an Assistant Professor of Chemistry at UC, Santa Cruz.

Dr. Morgans holds a B.S. in Chemistry from Saint Joseph’s University in Philadelphia and a Ph.D. in Chemistry from Columbia University.

**Patrick Andre, Ph.D. – *VP of Biology***

Dr. Andre is a pioneer in integrin biology and drug discovery, and has 15 years of experience in target identification, validation and drug development. Prior to joining the Company, Dr. Andre served as Principal Scientist at Merck Sharp & Dohme Corp., a subsidiary of Merck & Co, Inc. (“Merck”), where he worked in the Cardio Metabolic Department. There, he led programs from target identification through lead identification and optimization, also served as a therapeutic area representative for a marketed drug. Prior to Merck, Dr. Andre held positions of increasing responsibility at Portola Pharmaceuticals, Inc. for 9 years, most recently as the Senior Director, where he developed novel assays and performed mechanistic studies for antiplatelet, anticoagulant and anti-inflammatory agents. Dr. Andre has published more than 40 articles in top-tier peer-reviewed journals and holds more than 15 patents.

Dr. Andre holds a Ph.D. in Molecular Biology from Paris VII University and completed his postdoctoral research at Harvard Medical School.

**Scott Turner, Ph.D. – *VP of Translational Sciences***

Dr. Turner is a leader in the field of stable isotope R&D of novel tools for drug discovery and development. Prior to joining the Company, Dr. Turner was the VP of R&D at KineMed, Inc. where he led the technology development and biomarker discovery efforts in fibrosis, atherosclerosis and metabolic disease. He has co-authored more than 50 publications and holds several patents in the areas of metabolic fluxes and stable isotopes methods. Dr. Turner has been awarded 3 National Institutes of Health (“NIH”) grants to fund his research into novel in vivo for biomarker discovery and serves on the editorial board of Biomarker Insights.

Dr. Turner received his Ph.D. in 2002 in Nutritional Sciences and Toxicology from the UC, Berkeley. During graduation, his research focused on the development and application of stable isotope methodology to the study of adipose tissue dynamics in the leptin-deficient (ob/ob) mouse.

Capitalization and Ownership

The Company is authorized to issue common and preferred stock. As of the Valuation Date, the following

shares were issued and outstanding or anticipated to be issued and outstanding:

*Table 1: Capitalization Table*

|  |  |  |  |
| --- | --- | --- | --- |
| EQUITY CLASS | AUTHORIZED | OUTSTANDING | AS CONVERTED |
| **Series A** | 56,000,000 | 56,000,000 | 56,000,000 |
| **Series B\*** | 58,109,973 | 45,142,960 | 45,142,960 |
| **Common** | 147,682,655 | 15,422,682 | 15,422,682 |

\*As of the Valuation Date, the Company has issued 45.1 million shares in Series B Tranche I at an Original Issue Price (“OIP”) of $1.3767 and expects to issue another 5.7 million shares in Tranche II (“Series B Tranche II”) within 90 days after Series B Tranche I close date. As such, we considered Series B Tranche II in our analysis.

The Company had 216,900 Common Stock options outstanding and 7,838,918 Common Stock options reserved for future grants as part of Company’s equity-based compensation plan (the “Options Available”). According to Management, 100.0% of the Options Available are expected to be granted in the near future and prior to a possible exit/liquidity event for the Company. As such, due to the dilutive impact of the option pool, we included these shares in our analysis. Additionally, the Company also had 1,149,109 Phantom stock\* as of the Valuation Date.

Below is a summary of Common Stock options outstanding as of the Valuation Date:

*Table 2: Common Stock Options Summary*

|  |  |  |  |
| --- | --- | --- | --- |
| CLASS OF STOCK | EXERCISE PRICE | SHARES | |
| **Common Stock Options** | $0.001 | | 10,000 |
| **Common Stock Options** | $0.010 | | 206,900 |

\*A Phantom stock is a performance-based incentive plan which entitles an employee the right to receive cash payments after a specific period of time or upon fulfilment of specific criteria and generally have rights similar to options.[[11]](#footnote-11) For the purposes of our analysis, we considered the Phantom stock as options and assumed the strike price as the concluded value of Common Stock.

Refer to Exhibit G.1 for further details on the Company’s capitalization.

Future Financing

Based on discussions with Management, we considered the timing and magnitude of future rounds of financing that would be necessary to reach the assumed exits. Management estimated that the Company would require the below mentioned additional funding prior to reaching a possible exit:

1. The Company plans to go public in late 2019. However, if the results from the Company’s Phase Ib clinical trials are not favorable and the Company delays the IPO, it would require $70.0 million in Series C financing to fund its operations and Phase IIa clinical trials of PLN-74809. As such, we assumed $70.0 million of Series C financing at the end of 2019.

Stage of Development

The Practice Aid defines six stages of development for start-up enterprises.

Stage 2 companies lack product revenue but have substantive expense history. Product development is underway and business challenges are thought to be understood. Stage 2 companies customarily have second or third round financing. Typical investors are venture capital firms; they may provide additional management or board of directors’ expertise. Generally, securities issued to those investors are in the form of preferred stock.

RNA classifies this Company as a Stage 2 company because the Company has successfully raised the first tranche of its second round of preferred financing, selected PLN-74809 as its lead candidate, for which the Company plans to file an IND application by the end of 2018 and expects to complete Phase Ib clinical trials by the end of 2019. The Company has substantive expense history and a complete Management team.

Industry Overview

Overview

In valuing a business or its assets, it is important to consider the condition of, and the outlook for, the industry in which the enterprise operates. Depending upon the nature of the marketplace, industry conditions can significantly affect financial performance and, consequently, value. The following section provides a brief overview of the fibrotic diseases market with a focus on IPF, Cystic Fibrosis (“CF”) and NASH treatments as well as a discussion of the competitive environment in the space.

Fibrosis Market Overview (IPF, CF and NASH)

Fibrosis, a pathologic feature of many diseases, is caused by a dysfunction in the body’s natural ability to repair damaged tissues which when left untreated, can result in scarring of vital organs causing irreparable damage and eventual organ failure. IPF is a highly lethal and rare disease that currently affects approximately 140,000 people in the US, resulting in 40,000 deaths per year. Patients diagnosed with IPF experience progressive breathlessness and eventually complete respiratory failure.[[12]](#footnote-12)

According to iHealthcareAnalyst, the global IPF market is expected to reach $4.6 billion by 2023. According to the NIH, about 100,000 people in the US are suffering from IPF, and approximately 30,000 to 40,000 new cases are found each year. Globally, IPF affects 13 to 20 out of every 100,000 people. In 2014, the FDA approved two anti-fibrotic medication drugs that inhibit or reduce fibrosis in the lung: Ofev (nintedanib) from C.H. Boehringer Sohn AG & Ko. KG and Esbriet (pirfenidone) from F. Hoffmann-La Roche Ltd. (“Roche”) for the treatment of patients with IPF.[[13]](#footnote-13)

According to Research and Markets, IPF is a condition in which the tissues in the lungs become thick and stiff over time because of which the brain and other organs fail to receive optimum oxygen. The global IPF market sales in 2016 was $1.6 billion, and is expected to reach at $3.6 billion by 2023, growing at a CAGR of 11.9%. The major factors that drive the growth of the IPF market include rise in prevalence of fibrotic diseases, increase in geriatric population, the surge in demand for cost-effective drugs and introduction of advanced treatment options.[[14]](#footnote-14)

According to Effectual Services, CF is a rare genetic disorder caused by a mutation in the CF Transmembrane Conductance Regulator gene located on chromosome 7. This disorder primarily affects the lungs and digestive system and causes secretions to become thick and sticky. Patients with CF suffer from lung disease resulting from a cycle of mucus retention, infection, and inflammation, as well as pancreatic dysfunction resulting in calorie malabsorption.

The global CF market is anticipated to reach $12.2 billion by 2028 from the estimated value of $3.8 billion in 2018, growing at a CAGR of 12.3%. The market is primarily driven by increasing CF prevalence, rise in R&D expenditures by pharmaceutical companies and increase in funding by government bodies. Whereas factors such as high cost of treatment, and limited availability of medicine for all mutation types are expected to restrict market growth.

The CF pipeline comprises of diverse sets of molecules with most products in early-stage of development. In total, 124 molecules are in development, either alone or in combination with other molecules. The majority of these molecules are in the preclinical stage, followed by Phase II and Phase I. Currently, there are just three FDA-approved molecules targeting specific mutation types that are commercially available in the market.[[15]](#footnote-15) Recently in 2017, the FDA approved Kalydeco (ivacaftor) from Vertex Pharmaceuticals Incorporated (“Vertex”).[[16]](#footnote-16)

NASH is the most severe form of non-alcoholic fatty liver disease and is characterized by the presence of an abnormal accumulation of fat in the liver which in some individuals can progress to liver cell injury (hepatocellular ballooning) and inflammation. As NASH evolves, over time it can result in excessive scarring in the liver (fibrosis), a natural response to injury which can lead to liver cirrhosis or liver cancer.[[17]](#footnote-17)

According to Allied Market Research, NASH market was valued at $1.2 billion in 2017 and is expected to reach $21.5 billion by 2025, growing at a CAGR of 58.4% from 2021 to 2025. At present, there is no FDA-approved drug to treat NASH. Lifestyle interventions are the first-line approach to manage patients with NASH; and then vitamin E and pioglitazone are recommended as first line drugs.[[18]](#footnote-18) According to Research and Markets, the global NASH market was valued at $729.0 million in 2016 and is expected to reach $20.7 billion by 2025, growing at a CAGR of 46.1% from 2017 to 2025. Despite growing treatment need, there is no approved therapeutic for NASH. Some drugs are prescribed off-label such as Metformin which is used in type-2 diabetes and NASH. However, NASH therapeutics exhibit a lucrative pipeline with more than 20 drug candidates undergoing Phase II clinical trials. The most promising drugs anticipated to enter the NASH market in future are Genfit SA’s (“Genfit”) Elafibranor and Intercept Pharmaceuticals, Inc.’s (“Intercept”) Obeticholic Acid (Ocaliva) which are in Phase III clinical trials. Many large pharma companies such as Gilead Sciences Inc. (“Gilead”), Novo Nordisk A/S (“Novo Nordisk”), and BMS are developing drugs for NASH.[[19]](#footnote-19)

Competition

The key players operating in the IPF market include MediciNova, Inc., Boehringer Ingelheim Corp., Roche, Promedior, Inc., Merck, Galapagos NV, Biogen Inc., BMS, Prometic Life Sciences Inc., FibroGen, Inc. and Cipla Inc.[[20]](#footnote-20) Key players in the CF market are Vertex, Roche, Allergan, Novartis International AG (“Novartis”), AbbVie Inc., Pharmaxis Limited, Chiesi Farmaceutici S.p.A., PARI Medical Holding GmbH and Gilead.[[21]](#footnote-21) The key players in the NASH market include Allergan, Cadila Healthcare Limited, Conatus Pharmaceuticals Inc., Galmed Pharmaceuticals Ltd, Gemphire Therapeutics Inc., Genfit, Gilead, Intercept, Novartis, and Shire Plc.[[22]](#footnote-22)

In addition to the companies mentioned, the Company faces competition from several other public and private companies, developing treatments for IPF and NASH. Public companies like Genzyme Corporation, Sanofi S.A., Kadmon Holdings, LLC, Adheron Therapeutics, Inc., AdAlta Ltd., Relief Therapeutics Holding AG, , Pulmatrix, Inc., Amarillo Biosciences, Inc., Tasly Pharmaceutical Group Co. Ltd., Yuhan Corp. and ImmuneWorks, Inc. Some private players are Aptalis Pharma Inc., Amsterdam Molecular Therapeutics, Cempra, Inc., Horizon Orphan LLC, Wuxi PharmaTech (Cayman) Inc., Actelion Ltd., Genentech, Inc., InterMune, Inc. and NGM Biopharmaceutical.[[23]](#footnote-23)

Valuation Methodology Overview

The following section provides an overview of various valuation methodologies considered as part of this analysis.

Business Enterprise Valuation Theory

In summary, there are three generally accepted valuation approaches available when valuing the operating assets and liabilities of a closely held business:

1. Cost Approach (“Cost Approach”);
2. Income Approach (“Income Approach”); and
3. Market Approach (“Market Approach”).

Within each category, a variety of methodologies exists to assist in the estimate of value. They are discussed in further detail herein. In addition, there is the Hybrid Approach (“Hybrid Approach”), a methodology that combines two or more of these approaches.

Cost Approach

The Cost Approach relies upon separately valuing each sub-component of the company being valued. The discrete valuation of an asset using this approach is based upon the concept of replication or replacement as an indicator of value. In essence, this method answers the build approach when looking at a “buy versus build” approach to investment.

In the case of most IP-centric technologies with explicit patent protection and substantive and broad blocking rights to competitive entrants, the Cost Approach is not a reasonable proxy for value. By the time most products are commercial, the cost to recreate the existing asset is prohibitive in these circumstances given the demanding regulatory requirements. Furthermore, these costs should be considered sunk costs and, as such, other approaches to value should be considered.

Income Approach

The Income Approach is based on the earnings power, or the cash generating abilities of the company being valued. This approach focuses on determining a forecast benefit stream that is reflective of the subject company’s most likely future performance. The forecast benefit stream is then discounted to present value based on the appropriate risk‐adjusted discount rate or capitalization rate. The DCF is a commonly used Income Approach. In addition, in the life sciences, if clinical or regulatory risks remain, an rNPV is also common. For IP-centric rights interests, with reasonable patent protection and expectations for a significant decrease in market share upon patent expiration, the Income Approach is generally the favored approach by industry professionals.

Market Approach

In summary, the Market Approach references actual transactions involving (i) the subject being valued, or (ii) similar assets and/or enterprises. The Market Approach generally consists of two primary methodologies: the Guideline Comparables Method (“GCM”) and the Guideline Transaction Method (“GTM”). The GCM involves identifying and selecting publicly traded companies or guideline public companies (“Guideline Public Companies”) with financial and operating characteristics similar to the subject being valued, and subsequently deriving multiples and other metrics from such Guideline Public Companies to apply to the subject being valued. The GTM involves identifying and selecting actual transactions, such as mergers, acquisitions, investments, and licensing agreements, involving companies and/or assets with financial and operating characteristics similar to the subject being valued, and subsequently deriving multiples and other metrics from such guideline transactions (“Guideline Transactions”) to apply to the subject being valued.

The third method under the Market Approach that can provide an indication of value is the Option Pricing Model Backsolve Method (the “OPM Backsolve Method”). By considering the sale price of shares in a recent financing, the equity value can be “back-solved” using an option pricing model that gives consideration to the Company’s capitalization structure and the rights of the preferred and common shareholders. This methodology is most applicable when a valuation is conducted close to the date of a financing transaction, and when other methodologies are deemed less reliable.

Hybrid Approach

A Hybrid Approach combines two or more of the approaches above. Typically, this involves some combination of an Income Approach with a Market Approach. For example, a licensing transaction, which has definitive upfront payments, milestones and royalties, can be viewed as an Income Approach; however, the determination of reasonable consideration across the three major approaches can be based on comparable license arrangements for similar assets which can be viewed as a Market Approach.

Allocation Methodology Theory

In summary, there are four generally accepted allocation methodologies available when determining the value of various classes of securities underlying a company’s capital structure:

1. Current Value Method;
2. Option Pricing Method;
3. Probability-Weighted Expected Return Method; and
4. Hybrid Method.

Within each category, a variety of methodologies exists to assist in the estimation of value, as discussed in further detail herein.

Current Value Method (“CVM”)

The CVM is based on an allocation theory that shareholders with senior stock rights would attempt to maximize the value of their holdings based solely on the senior interest’s underlying liquidation preference, participation rights and conversion rights, as well as an imminent liquidity event. In essence this approach determines the value of the enterprise at the Valuation Date, distributes said value through the existing capital structure waterfall and then applies discounts or premiums as may be appropriate to the varying security classes. It does not consider optionality or upside payoffs for those securities that may not receive value at the current valuation (e.g. value does not exceed preference) but may receive value if value increases over time (e.g. future value exceeds preference).

RNA noted that the CVM is appropriate under following circumstances:

1. When an imminent liquidity event in the form of an acquisition or dissolution of the enterprise is assumed and/or the expectations about the future of the enterprise as a going concern are effectively immaterial; and
2. When the enterprise is assumed to be at such an early stage of its development that:
   1. No material progress has been made on its business plan;
   2. No significant equity value has been created above the liquidation preference of the preferred stock; and
   3. There is no reasonable basis for estimating the timing and magnitude of any common equity value above the liquidation preference that might be created in the future.

Option Pricing Method (“OPM”)

The OPM relies on financial option theory to allocate value among different classes of members’ equity based upon a future option “claim” on value. Under the OPM, the values of the various classes of stock are estimated as the net value of a series of call options, representing the present value of the expected future returns to the shareholders.

Essentially, the equity claims of a shareholder class are equivalent to a call option on the stock’s participation in the value of the subject company at or above the respective preferred shareholders’ liquidation preferences. Thus, an equity class can be valued by estimating the value of its share in each of these call option rights.

The OPM involves estimating the value of the call options using the Black-Scholes option pricing model (“Black-Scholes”)[[24]](#footnote-24) a lattice model (“Lattice”)[[25]](#footnote-25) or a risk-neutral Monte Carlo simulation at a series of exercise prices that coincide with the liquidation and conversion preferences of the holders of preferred and common shareholders. The Black-Scholes model and most Lattice models assume that a company’s or an asset’s potential return distribution follow a log-normal path and that the period to period movement in price follow a geometric Brownian motion (meaning that prices fluctuate smoothly from period to period and do not essentially jump). Furthermore, closed form models like Black-Scholes do not allow for certain types of liquidity events, like structured sales, which may have some contingent consideration component as part of the exit value. Simulation techniques can capture the reality of most assets noting that companies and asset values usually “jump” on data, that returns can be bi-modal for development stage assets, and that a license or structured exit on the back-end can be simulated. That said, simulation techniques can be costly to develop, can have limited transparency, and can be understood by a much smaller audience than the other techniques.

RNA also noted that the OPM may be used to determine the equity value of a company by using the OPM Backsolve Method. In an OPM framework, the equity value is inferred from a recent financing transaction. It involves making assumptions for the time to liquidity, volatility, and risk-free rate and then solving for the value of equity such that value for the most recent financing equals the amount paid.

In general, while simple in its application, especially for Black Scholes OPM techniques, RNA does not typically apply these approaches when considering allocation techniques for the valuation of equity interests in early stage, privately held life science companies. In doing so, we would violate the major assumptions of both the Black Scholes and the Lattice approaches. Additionally, the simulation approach can generally be reasonably approximated by a scenario-based approach like the PWERM as described below.

Probability-Weighted Expected Return Method (“PWERM”)

Under the PWERM, the value of a company’s particular equity class is estimated based upon an analysis of future values for the entire enterprise assuming various future outcomes. Share value is based upon the probability-weighted present value of these expected outcomes, as well as the rights of each class of preferred and common stock.

The PWERM is well suited for capturing potentially dramatic increases or decreases in value that may result from potential future events that are not log-normally distributed that have the potential for structured exits with contingent consideration. It can take into account elements that apply when considering real-world, risk-adjusted decision frameworks. Candidly, it is the framework most business development, private equity and other transactional professionals consider when thinking through the potential outcomes for an enterprise (i.e. a decision tree or a scenario analysis). We noted that the application of the PWERM is reasonable under circumstances where there is a broad range of possible future outcomes for the enterprise noting that the likelihood of such outcomes and the resulting valuation indications are not assumed to be log-normally distributed as under the OPM. RNA also noted that the PWERM may be used to determine the enterprise value of a company given the contemplation of future values for the entire enterprise assuming various future outcomes in a back-solve type of methodology as is noted above for the OPM, albeit a bit more complex with many more inputs to balance. For privately-held companies with complex capital structures in the life sciences, it is generally RNA’s preferred approach to use a PWERM construct to allocate value across the various security classes.

Hybrid Method

The Hybrid Method is a cross between the PWERM and OPM. It is performed by first estimating the probability-weighted value across multiple scenarios then use the OPM to estimate the allocation of value within one or more of those scenarios. The Hybrid Method can be a useful alternative to explicitly modeling all PWERM scenarios in situations when the company has transparency into one or more near-term exits but is unsure about what will occur if the current plans fall through.

An advantage of this method is that it utilizes the conceptual framework of option pricing theory to model a continuous distribution of future outcomes and to capture the option-like payoffs of the various share classes while also explicitly considering future scenarios and the discontinuities in outcomes that early-stage companies experience. A disadvantage is that these models require a number of assumptions and may be overly complex. In addition, there may be many potential issues surrounding the integration of risk-adjusted and risk-neutral modeling frameworks.

Valuation Analysis

Selected Valuation Approaches

Considering the above, the valuation determination herein has been developed primarily on the basis of the PWERM. Taking the stage of development of the Company and expected liquidity events into account, we elected not to rely upon a pure application of the three general valuation approaches discussed above. Notwithstanding, we did consider elements of the Market and Income Approaches for gauging the appropriateness of certain PWERM inputs and assumptions. Refer to Exhibit B.1 for details on the PWERM.

Income Approach

The DCF method aggregates the present value of all future cash flows available to the investment holder to determine the valuation indication as of the Valuation Date. The DCF methodology involves the following key steps:

1. Determination of cash flow forecasts (“Representative Level Projections”); and
2. Selection of a range of comparative investment risk-adjusted discount rates to apply against the Representative Level Projections.

For purposes of this analysis, as detailed above, RNA did not rely on the DCF in determining a valuation indication for the Company. The Company is at an early stage of development and does not expect to generate product revenue in near future. Notwithstanding, RNA did consider discount rates, a key component of the PWERM.

**Discount Rate**

A discount rate represents the rate of return an investor requires to justify investment in a company while giving consideration to the risk associated with the investment. Discount rates are determined based on market expectations of the total rate of return and the rate at which capital will be attracted to a company. One of the most important considerations in determining an appropriate discount rate is the level of risk inherent within a company. Therefore, due consideration is given to the rates of return available on alternative, comparable investments available to a hypothetical buyer.

Numerous factors influence the choice of an appropriate discount rate including those factors external (potentially systematic) and internal (potentially unsystematic) to the potential investment. External factors include, but are not limited to, (i) current general economic conditions, (ii) expectations regarding future economic conditions as of the analysis date, (iii) sources of capital available to a company and (iv) competitiveness of the markets served by the company. Internal factors include but are not limited to (i) the financial situation of the Company, (ii) the ability to generate positive cash flows, (iii) the likelihood of the Company facing difficulty in procuring raw inputs and (iv) the ability to deliver products to an available market.[[26]](#footnote-26)

Three studies in the Practice Aid outline estimated return requirements for companies at various stages of development.

*Table 3: Required Rates of Return by Stage of Development*

|  |  |  |  |
| --- | --- | --- | --- |
| **RATE OF RETURN ANALYSIS** | | | |
| **Stage of Development** | **Plummer** | **Scherlis and Sahlman** | **Sahlman and Others** |
| **Start Up** | 50% to 70% | 50% to 70% | 50% to 100% |
| **Early Development** | 40% to 60% | 40% to 60% | 40% to 60% |
| **Expansion** | 35% to 50% | 30% to 50% | 30% to 40% |
| **Bridge / IPO** | 25% to 35% | 20% to 35% | 20% to 30% |

Source: AICPA Valuation Guide, Appendix B (Venture Capital Rates of Return)

The Practice Aid task force defined each stage of development as the following:

**Start-Up (“Start-Up”):** Start-up-stage investments are typically made in enterprises that are less than a year old. The venture funding is to be used substantially for product development, prototype testing, and test marketing.

**Early Development (“Early Development”):** Early-development-stage investments are typically made in enterprises that have developed prototypes that appear viable and for which further technical risk is deemed minimal, although commercial risk may be significant.

**Expansion (“Expansion”):** Enterprises in the expansion stage usually have shipped some product to consumers (including beta versions).

**Bridge/IPO (“Bridge/IPO”):** Bridge/IPO-stage financing covers such activities as pilot plant construction, production design, and production testing, as well as bridge financing in anticipation of a later initial public offering.

Notwithstanding, these rates of return are not inclusive of the probabilities associated with achieving such returns. As such, RNA considered the probabilities of success (as contemplated under the PWERM) in determining the appropriate cost of capital for the Company’s different classes of securities, as discussed below.

For the purposes of determining discount rates under the PWERM, RNA noted the following:

1. **Preferred:**
2. The preferred portion of the Company’s capital structure was bifurcated into debt-like and equity-like components. The debt-like piece reflects liquidation preferences (or the equivalent value to the extent preferred converts) while the equity-like segment reflects value over and above such liquidation preferences;
3. The values for both were calculated as the probability-weighted present value of each relevant component under the PWERM;
4. The cost of capital for the debt-like portion was based on rates for venture debt based on RNA’s observations of such markets; and
5. The cost of capital for the equity-like component was a back solve in order to achieve approximately 15.0% to 20.0% venture capital portfolio returns (across the total preferred investment). Such venture capital portfolio returns are generally consistent with observations of historical and expected venture capital returns for early stage biotechnology investing (adjusted for carried interest).

1. **Equity:**
2. The share count included outstanding Common Stock with consideration of issued warrants, options and other securities, as appropriate;
3. The price was generally in line with the concluded fair market value of the Common Stock; and
4. The rate reflects consideration of an implied return to common (based on the probability of successful exits under the PWERM) higher than the implied return to preferred stock investors due to the higher risk profile of common Stock relative to preferred stock. More specifically, we noted that the common stock holders are entrepreneurs and entrepreneurial employees and are not typically well-diversified investors. Based on the article “Opportunity Cost of Capital for Venture Capital Investors and Entrepreneurs” by Kerins, Smith and Smith, entrepreneurs have a 2.0x to 4.0x cost of capital differential from investors. However, due to compressed time to liquidity, RNA elected to apply a lower discount rate, which is slightly higher than the cost of capital for the equity-like component of the Company’s preferred stock. These returns indicate a marketable level of value and do not include a DLOM, so we explicitly considered the application of DLOM (ranging from 31.0% to 62.0%, explained in detail in the latter part of the Report) for the PWERM scenarios to estimate the non-marketable price of the Common Stock.

Refer to Exhibit D.1 for additional details.

Because private enterprises like the Company often seek financing from private equity investors, including venture capital firms, the venture capital arena provides an observable market for the cost of capital for privately held enterprises. The following table illustrates the dollar weighted internal rate of return on vintage year investments in the life sciences by venture capital firms, as published by Cambridge Associates and the National Venture Capital Association (“NVCA”):

*Table 4: Venture Capital Weighted IRR*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VENTURE CAPITAL DOLLAR WEIGHTED INTERNAL RATE** | | | | | | | | | | | | | | |
| **OF RETURN ON VINTAGE YEAR COMPANIES** | | | | | | | | | | | | | | |
| **Industry** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
| Biotechnology/ Biopharma/R&D | 20.41 | 6.94 | 15.16 | 7.83 | 17.54 | 11.69 | 27.76 | 32.12 | 39.03 | 61.49 | 100.92 | 50.13 | 44.93 | 42.51 |
| Healthcare Devices | 3.06 | 2.03 | 8.98 | 3.23 | 3.72 | 3.97 | -1.15 | 13.18 | 11.76 | 14.76 | 2.71 | -1.82 | 27.50 | -2.65 |
| Healthcare Services | 21.28 | 20.55 | 12.40 | 6.86 | 14.88 | 6.28 | 25.42 | 6.80 | 26.14 | 27.15 | 43.98 | 21.67 | 34.61 | 37.54 |
| Healthcare Software/Systems | -12.15 | 9.95 | 9.36 | 6.73 | 17.45 | 48.29 | 4.77 | 13.61 | 30.32 | 7.34 | 12.34 | 17.21 | 19.53 | 12.96 |
| Pharmaceuticals | 24.72 | 13.37 | 3.96 | 5.82 | 21.78 | 9.87 | 28.74 | 32.08 | 16.10 | 64.41 | 22.32 | 26.75 | 27.97 | 21.85 |

*Source: Cambridge Associates LLC US Venture Capital Index® and Selected Benchmark Statistics, December 31, 2017*

These rates of return illustrate the pooled gross IRR to investors in venture capital funds. The returns on investments in the biotechnology and pharmaceutical sectors have been strong since 2010; however, over a longer duration (and a full business cycle), return expectations would be significantly less than recent performance and expected return thresholds would be more consistent with an average historical performance range of 15.0% to 25.0%, especially if the industry sectors go out of favor.

Based on the considerations herein, RNA estimated an enterprise-level WACC of 17.0% as the discount rate, which has been calculated as a blended rate of all the components of capital structure. Refer to Exhibit D.1 for further details.

Relative to the Previous Valuation, the enterprise-level WACC is reduced from 30.0% to 17.0%, since the Company has raised $56.0 million in Series A (i.e. $11.0 million more than the expected $45.0 million in the Previous Valuation), $62.1 million in Series B Tranche I and is expecting to raise $7.9 million in Series B Tranche II leading to reduced overall portfolio-level risk. Furthermore, the Company replaced its lead program since the Previous Valuation as the biology outcomes were not as per the expectations in the Previous Valuation. Since the Previous Valuation, PLN-74809 progressed significantly in its development along with other pipeline products and the Company plans to file an IND application by the end of 2018. Given these developments, the enterprise-level WACC is selected at 17.0%.

Market Approach – GCM

The GCM involves the determination of a valuation indication by multiplying a representative level of earnings, cash flows or other measure against an appropriate risk‐adjusted multiple. This approach provides an indication of value for a company or asset that corresponds with the particular earnings figure being capitalized on a controlling or non‐controlling basis dependent on the underlying levels of multiples applied.

For purposes of this analysis, RNA did not rely upon the GCM in determining the enterprise value of the Company since it is a pre-revenue company. Notwithstanding, RNA did consider Guideline Public Companies deemed comparable to the Company, a key element of the Market Approach. Refer to Exhibits E.1 and E.2 for details on enterprise value, projections, operating metrics, business descriptions, and other metrics for the selected Guideline Public Companies.

For purposes of this analysis, RNA considered the following Guideline Public Companies:

1. Vertex Pharmaceuticals Incorporated;
2. FibroGen, Inc.;
3. Galapagos NV;
4. Madrigal Pharmaceuticals, Inc.;
5. Intercept Pharmaceuticals, Inc.;
6. Insmed Incorporated;
7. Genfit SA;
8. Kadmon Holdings, Inc.;
9. MediciNova, Inc.;
10. Savara Inc.;
11. Galmed Pharmaceuticals Ltd.;
12. Galectin Therapeutics, Inc.;
13. Corbus Pharmaceuticals Holdings, Inc.;
14. ProQR Therapeutics N.V.;
15. Miragen Therapeutics, Inc.;
16. Conatus Pharmaceuticals Inc.;
17. Immuron Limited;
18. AdAlta Limited;
19. Pulmatrix, Inc.; and
20. AmpliPhi Biosciences Corporation.

RNA acknowledged the characteristics of the Company that differ from the characteristics of the Guideline Public Companies, detailed as follows:

1. The Company's operations focus primarily on discovering and developing treatments for fibrotic diseases, which is generally different from and/or less diversified than the businesses of the selected Guideline Public Companies;
2. The Company must raise financing in order to develop certain assets (noting that the Guideline Public Companies generally have easier access to capital to develop their programs);
3. The Company is generally smaller and at an earlier development stage than the Guideline Public Companies;
4. The range of WACC observed for the Guideline Public Companies represent the growth and risk profile associated with each of the selected Guideline Public Companies. In general, the strategies and prospects of the Company represent a higher risk profile than the Guideline Public Companies; and
5. The Company is not a publicly traded company and relies on private sources of equity. Public companies typically have lower costs of equity since the public equity markets typically demand lower levels of return compared to private sources of equity. Investments in public companies provide a liquid investment that may compensate for the minority level interest typically involved.

As noted above, RNA did not develop an enterprise value indication based on the application of market multiples.

Market Approach – GTM

RNA did not rely upon the GTM because the Company is pre-revenue. Furthermore, it is relatively difficult to identify market transactions that are reasonably similar to the Company with respect to stage of development, underlying economic fundamentals, products (i.e., potential product pipeline) and prospects for success. Notwithstanding, we did consider Guideline Transactions deemed comparable to the Company, which is a key element of the Market Approach, for purposes of assessing exit values under the PWERM.

RNA reviewed the M&A transactions in recent years in similar industries, and considered various transactions that were comparable to the Company. RNA acknowledged the characteristics of the target companies underlying the Guideline Transactions, detailed as follows:

1. The Company’s operations focus primarily on discovering and developing treatments for fibrotic diseases, which are generally different from and/or less diversified than the businesses of the target companies;
2. The Company is generally smaller in size than the target companies underlying the Guideline Transactions, and as such, does not benefit from the leverage over suppliers and customers and certain economies of scale to which the target companies may be privileged; and
3. The strategies and prospects of the Company generally represent a higher risk profile relative to most of the target companies since the Company is currently at an earlier stage/smaller than when the target companies were acquired.

As noted above, RNA did not develop an enterprise value indication based on the application of market multiples.

Allocation Analysis

Considering the above, the allocation determination herein has been developed primarily on the basis of the PWERM to allocate the equity value of the Company across the Company’s capital structure. Though presented here, we did not rely on the OPM as our primary allocation method given difficulties in the application of the approach due to the disconnect with return distributions required for closed form option models like the Black-Scholes option model. We relied on the PWERM as our primary and only allocation methodology as we believe this methodology is better suited to addressing the outcomes associated with the Company and is better aligned with the methodologies employed by investors in companies similar to the Company.

Current Value Method

Based on the considerations detailed above, RNA noted that since the Company is not expecting an imminent liquidity event and is not at a very early stage of development, circumstances do not meet the appropriate criteria for the application of the CVM. As such, RNA has elected not to rely upon the CVM as a primary allocation methodology.

Option Pricing Method

Based on the considerations detailed above, as well as RNA’s observations of Guideline Public Companies, Guideline Transactions and general industry experience, RNA noted that the possible future outcomes and the resulting enterprise value indications for the Company would not generally follow a log-normal distribution. Given the Company’s early stage of development and limited historical performance and near-term projected performance, the underlying presumptions of a log-normal distribution of returns and a return distribution that follows a Geometric Brownian motion were not reasonable to apply in this analysis. As such, RNA has elected not to rely upon the OPM.

Probability Weighted Expected Return Method

Based on the considerations detailed above, as well as discussions with Management, RNA noted there is a broad range of possible future outcomes for the Company. As such, for the purposes of this analysis, RNA elected to use the PWERM as a primary methodology.

**Exit Modeling**

Management indicated that there may be potential exit opportunities. The projected successful exits were IPO and M&A events that may occur after the successful completion of Phase Ib and Phase IIa clinical trials of PLN-74809 and IND and Phase Ib clinical trials for αVβ1 respectively. The unsuccessful exits were Low Sale scenarios that reflected failure at the respective stage of development, i.e. Phase Ib and Phase IIa clinical studies of PLN-74809 and IND and Phase Ib clinical trials for αVβ1 respectively.

The exit scenarios forecasted as part of the PWERM were as follows:

1. **IPO:** An IPO scenario reflects an exit or liquidity event by means of a sale of stock by the Company to the public. Following are the IPO scenarios assumed at different stages of development:
   1. **IPO (Early):** An IPO exit is assumed at the end of 2019 if PLN-74809 successfully completes Phase Ib clinical trials at the end of 2019; and
   2. **IPO (Late):** An IPO exit is assumed at the end of the second quarter of 2021 if PLN-74809 successfully completes Phase IIa clinical trials and αvβ1 successfully completes Phase Ib clinical trials;
2. **M&A:** The M&A scenarios reflect a potential exit for the Company via a merger or acquisition at the end of the second quarter of 2021. RNA considered only a late M&A exit scenario based on Management’s expectations. If PLN-74809 successfully completes Phase IIa clinical trials and/or αvβ1 successfully completes Phase Ib clinical trials, then the Company may exit via an M&A; and
3. **Low Sale:** The Low Sale scenario illustrates an exit assuming that the Company has to shut operations due to failure at respective stages of drug development and inability to raise additional investor financing. Following are the Low Sale scenarios assumed at different stages of product development:
   1. **Low Sale (Early):** A Low Sale scenario is assumed at the end of 2019 if PLN-74809 fails to complete Phase Ib clinical trials and αvβ1 fails to receive an IND approval, or if the Company fails to raise $70.0 million in Series C financing; and
   2. **Low Sale (Late):** A Low Sale scenario is assumed at the end of the second quarter of 2021 if PLN-74809 and αvβ1 fail to complete Phase IIa and Phase Ib clinical trials respectively.

Refer to Exhibit B.1 for details of the scenarios identified, and descriptions of the outcomes forecasted in each discrete scenario.

**Structured Exits**

A structured exit coupled with different liquidation preferences creates a framework whereby preferred shareholder may have an accelerated timeline to cash flows compared to common shareholders. The structure of such a transaction would mean that cash flows to a preferred shareholder and a common shareholder would accrue over a period, and the midpoint of such a period would be 3.0 years, from the date of exit. As such, we added an additional term of 3 years for the calculations of DLOM for Structured Exits, as explained further in the DLOM section below.

**Non-Structured Exits (Full Payment on Exit)**

Non-structured exits assume that all exit proceeds are paid on the date of exit. Unlike structured exits, there is no contingent consideration modeled in this type of exit. The structure of such a transaction would mean that cash flows to a preferred shareholder and common shareholder would accrue at the same point in time (i.e., on the date of exit).

IPO and Low Sale exits were modeled as non-structured exits for purposes of this analysis. M&A exit was modeled as a structured exit based on the recent trends in the industry.

**Exit Values**

The exit values were based on discussions with Management, review of GCM and GTM information, review of recent IPO information, licensing deals for companies in fibrosis-related diseases and RNA’s best estimates.

IPO Scenarios

In order to determine the exit values under the IPO scenarios, RNA considered the valuation of biopharmaceutical companies that went public between 2015 and the Valuation Date, as well as certain biopharmaceutical companies that were considered more comparable in terms of stage/indications (“IPO Comparables”) like developing drugs for treatment of fibrosis.

1. The exit value selected for the IPO (Early) scenario is close to the median of the range of pre-IPO equity values of the IPO Comparables; and
2. The exit value selected for the IPO (Late) scenario is slightly higher than the mean of the range of pre-IPO equity values of the IPO Comparables.

For the IPO (Early) scenario, RNA relied on the IPO of Corvus Pharmaceuticals, Inc., which was in Phase I/Ib and the pre-equity IPO value was $235.6 million. Another comparable company in Phase Ib was aTyr Pharma, Inc. with a pre-IPO equity value of $240.7 million.

For the IPO (Late) Scenario, RNA relied on the IPO of ObsEva SA, which was in Phase IIb and the pre-equity IPO value was $347.7 million. Other comparable IPO transactions in Phase II were Forty Seven, Inc. and AVROBIO, Inc. with pre-IPO equity values of $366.8 million and $340.1 million respectively.

Refer to Exhibits H.8 and Exhibit H.9 for further details.

M&A Scenarios

In addition to the deals included under the GTM, we considered the comparable licensing deals to select the exit value for the M&A scenario. RNA considered the exit value between the median and the mean of the range of the comparable licensing transactions. Refer to Exhibit H.7 for further details.

RNA primarily relied on the following licensing deals to determine the exit value for the M&A scenario:

1. Deal between Astellas Pharma Inc. and Chromocell Corporation deal worth $500.0 million. The licensed asset CC8464 was in Phase IIa clinical trials;
2. Deal between Gilead and Phenex Pharmaceuticals AG worth $470.0 million. The licensed asset was in Phase I clinical trials; and
3. Deal between BMS and Galecto Biotech AB worth $444.0 million. The licensed asset was in Phase I clinical trials.

The deals mentioned above included large biopharma companies as the licensee, which might not be comparable to the Company. As such, we selected $400.0 as the exit value for the M&A scenario. Refer to Exhibit H.7 for further details on the comparable licensing deals and Exhibit F.1 for comparable M&A transactions.

Low Sale Scenarios

The Low Sale scenarios reflect values resembling negative outcomes and significant sub-1.0x returns to investors, which is consistent with our observations of failed venture capital investments. The exit values in both the Low Sale Early and Low Sale Late Scenarios reflect the value of the Company’s IP and product pipeline at the time of exit. Based on this approach, we assumed a 0.75x multiple for both the Low Sale Scenarios. Considering that the Company has a strong product pipeline, RNA selected 0.75x exit multiple for both Early and Late Low Sale Scenarios at both Phase Ib and Phase IIa respectively.

Relative to the Previous Valuation, RNA increased the exit multiples for the Low Sale scenarios considering the value attributable to the additional candidates in the pipeline, including the progress in development of the lead candidate.

**Probability Weighting**

Probability weightings and the probability of technical success for clinical phases were established based on discussions with Management and considering the data published by various studies. For the purposes of this analysis, we considered the M&A as the most likely exit scenario.

The selected probabilities reflect Management’s anticipation about future exits. Refer to Exhibits B.2 and B.3 for further details. The probabilities assigned to each event are listed below:

1. IPO (Early) – Phase Ib: 6.5%;
2. IPO (Late) – Phase IIa: 8.5%
3. M&A (Late) – Phase IIa: 54.5%;
4. Low Sale (Early) – Phase Ib: 10.5%; and
5. Low Sale (Late) – Phase IIa: 20.0%.

Relative to the Previous Valuation, we considered changes to the exit scenarios assumed at different stages based on the progress of PLN-74809 and discussions with Management. Previously, we assigned approximately 75.0% weight to the Low Sale scenarios and approximately 19.4% weight to the M&A scenarios. Given the recent successful financing raise by the Company and overall reduction in risk, we reduced the probability allocated to the Low Sale scenarios to 30.5% and assigned higher probability (54.5%) to the M&A scenario.

**DLOM**

RNA applied DLOM explicitly since the discount rate applied to the Common Stock includes value of the Common Stock on marketable basis. Refer to the section “Discounts and Premium” below for further details.

Discounts and Premiums

Discount for Lack of Marketability

The holder of a nonmarketable investment is subject to the risk that the investment’s value will decline before the investment can be sold to another investor in a private transaction. Conversely, the holder of an investment that is identical but for the fact that there exists an active public market is not subject to the same risk. Therefore, the holder of the nonmarketable investment will have a higher required rate of return on the investment than the holder of the marketable investment. Consequently, the nonmarketable investment will sell at a discount to the marketable investment. RNA determined a DLOM as a necessary consideration in the analysis since the minority common stock holders of the Company, unlike the shareholders of the Guideline Public Companies, do not have access to an active public market for their securities. Further, the Company’s common stock holders do not possess the rights to force the Company to register with the Securities and Exchange Commission in order to sell their shares. The lack of marketability of common stock may materially limit a shareholder’s ability to liquidate the investment into cash without the risk of loss in value.

Factors that impact the size of the DLOM fall into two categories: (1) factors that affect the duration of the holding period necessary to locate a buyer and negotiate a sale, and (2) factors that affect the degree of risk faced per unit of time during this holding period. Risk per unit of time, according to modern investment theory, is the volatility of an investment’s total return (i.e., both dividends and capital appreciation), or the propensity for an investment’s actual return to differ from its expected return. Factors that either increase the duration of the holding period or increase the expected volatility of an investment’s total return result in higher DLOM. These factors and their directional impact (all else equal) on the size of the DLOM include the following, among others:

1. Presence/absence of a public market for the investment interest: Presence of a public market eliminates the discount;
2. Availability of information on the underlying business and its financial condition: More information reduces the discount because it is easier for prospective investors to perform valuation analyses of the investment;
3. Complexity of the underlying business and business strategy: Greater complexity increases the discount by making it more difficult for prospective investors to evaluate the business’ opportunities and threats, thus making it more difficult to perform valuation analyses of the investment;
4. Access to Management of the underlying business: Greater access to Management reduces the discount by making it easier for prospective investors to understand the business and evaluate the talent of the business’s management;
5. Information tracking by security/business analysts: Some large private companies release financial and other data and are followed by analysts tracking their publicly traded competitors. The presence of such a following reduces the discount by making it easier for prospective investors to perform valuation analyses of the investment;
6. Potential for a sale of the business or an IPO of stock: Such potential scenarios decrease the discount by reducing the expected total costs to an investor exiting the investment and decreasing the expected time until exit;
7. Variability of the business’s operating profit: Greater variability increases the discount since it increases the degree of risk per unit of time during the holding period (by affecting the outlook for future dividends and also, therefore, the valuation of the investment);
8. Financial leverage in the business: Higher leverage increases the discount since it increases the degree of risk per unit of time during the holding period (by affecting the outlook for future dividends and also, therefore, the valuation of the investment);
9. Size of the business as measured by sales or total assets: Small size, which has been associated empirically with greater overall business risk, increases the discount and vice versa; and
10. Regularity of distributions to equity holders: The expectation of regular future distributions monetized for equity holders in a flow through company and the potential for insufficient cash distributions to satisfy their tax liabilities (attributable to such company’s income) increase the discount.

With respect to a DLOM, empirical observations exist that show that, when investors consider alternative investments in either a freely traded security or a security whose marketability is limited, they will price the security with limited marketability at a discount to its freely traded counterpart. Market evidence of the DLOM can be found in two types of transactions, among others: (1) private placements of restricted stock by public companies, and (2) private placements of stock by private companies that later undergo initial public offerings of their stock.

**Asian Put Analysis**

The Finnerty average-strike put option model, also called an Asian put option, assumes that the put option is struck at the average price of the stock over the period from valuation date to expiration date. The seller is not assumed to have any special market timing ability. As noted above in the Structured Exits section, cash flows to a preferred shareholder and a common shareholder accrue over a period in a structured transaction. As such, to reflect the additional term to cash flows to preferred shareholders and common shareholders, we added 3 year term to exit in the M&A Scenario. Based on this analysis, RNA determined a DLOM of 31.4% for the IPO (Early) scenario, 46.6% for the IPO (Late) scenario and 62.0% for the M&A scenario respectively. Refer to Exhibit H.1 for further details.

**DLOM Conclusion**

Based on the quantitative and qualitative analysis above, RNA concluded a DLOM of 31.0% for the IPO (Early) scenario, 47.0% for the IPO (Late) scenario and 62.0% for the M&A scenario to be applied to the Common Stock. Refer to Exhibit H.1 through Exhibit H.6 for further details.

**Reconciliation to Latest Preferred Financing**

RNA noted that the combination of assumptions noted above ultimately resulted in an implied Series B per share price of $1.37, close to its original issue price of $1.38 per share. Refer to Exhibit B.1 for further details.

**PWERM Conclusion**

Based on the methodology outlined above, we concluded the value of Common Stock to be $0.29/share on a non-marketable, minority basis. Refer to Exhibit B.1 for further details.

Conclusion

The overall equity value is $147.7 million (rounded) as shown in Exhibit A.1, inferred from the assumptions used in the PWERM Method.

Based on our analysis, it is our opinion that the fair value and the fair market value of the Common Stock of the Company on a non-marketable, minority interest basis as of the Valuation Date is **$0.29 (TWENTY-NINE CENTS) per Share**.

*Table 5: Valuation Summary*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **VALUATION SUMMARY** |  |  | **(USD IN THOUSANDS  EXCEPT PER SHARE PRICE)** | | | |
| **Allocation of Value** |  |  | **Common Stock** | **Equity Value** | | **Selected Approach** |
| Probability-Weighted Expected Return Method |  |  | $0.29 | $147,700 | | Primary |
| **Concluded fair market value of Common  Stock (non-marketable, minority basis)** | | | | | **$0.29** | |

The conclusions and opinions expressed in this letter and the accompanying Report are contingent upon the qualifying factors set forth in the Statement of Limiting Conditions attached to the completed Report.

Statement of Limiting Conditions

This Opinion has been prepared pursuant to the following general assumptions and general limiting conditions:

* We assume no responsibility for the legal description of real property or matters including legal or title considerations. For real property included in this appraisal, we were not furnished legal descriptions or other detailed site and improvement drawings. Title to the subject assets, properties, or business interests is assumed to be good and marketable unless otherwise stated.
* The subject assets, properties, or business interests are appraised free and clear of any or all liens or encumbrances unless otherwise stated.
* We assume responsible ownership and competent management with respect to the subject assets, properties, or business interests.
* The information furnished by management is believed to be reliable. However, we issue no warranty or other form of assurance regarding its accuracy.
* We assume that there is full compliance with all applicable Federal, state, and local regulations and laws unless noncompliance is stated, defined, and considered in the appraisal Report.
* We assume that all required licenses, certificates of occupancy, consents, or legislative or administrative authority from any local, state, or national government, private company or organization have been or can be obtained or renewed for any use on which the valuation opinion contained in this Report is based.
* Possession of this valuation Report, or a copy thereof, does not carry with it the right of publication. It may not be used, without our written consent, for any purpose by any person other than the party to whom it is addressed and, in any event, only with proper written qualifications and only in its entirety.
* We, by reason of this valuation, are neither required to give testimony nor to be in attendance in court with reference to the assets, properties, or business interests in question unless arrangements have been previously made.
* This valuation Report has been prepared in conformity with, and is subject to, the requirements of the code of professional ethics and standards of professional conduct of the professional appraisal organizations of which we are members.
* Disclosure of the contents of this valuation Report is governed by the bylaws and regulations of the CFA Institute.
* No part of the contents of this Report, especially any conclusions of value, the identity of the appraisers, or the firm with which the appraisers are associated, shall be disseminated to the public through advertising, public relations, news, sales, or other media without our prior written consent and approval.
* We assume no responsibility for any financial reporting judgments, which are appropriately those of Management. Management accepts the responsibility for any related financial reporting with respect to the assets, properties, or business interests encompassed by this appraisal.

Qualifications

Samuel Renwick, CFA

Sam Renwick provides valuation and advisory services to biopharmaceutical, medical device and equipment, diagnostic companies, and clinical research and manufacturing organizations, as well as other IP-centric technology companies. His experience includes buy-side and sell-side advisory engagements for licensing, financing, and mergers and acquisitions, as well as for tax and financial reporting matters for large public companies to small venture-backed enterprises. Whether developing dynamic, patient flow models for late-clinical therapeutic assets or developing an opinion of value for a security for compliance purposes, Mr. Renwick combines his breadth of industry knowledge with deep expertise in finance and financial models to create compelling communications regarding the value proposition of an asset, portfolio of assets or a company. Mr. Renwick has worked with well over 600 life sciences and technology companies in his career.

Professional Affiliations

* UCLA Anderson Business Honor Society
* CFA Institute
* Chartered Financial Analyst Society of San Francisco
* Member, Fair Value Forum
* Licensing Executive Society

Education

* BA/Economics & Business – Westmont College, Honors
* MBA/Finance – UCLA Anderson, Honors, J. Fred Weston award for Academic Excellence in Finance
* Chartered Financial Analyst (CFA)

Publications

* 409A Administration Handbook Valuation Section – Thomson Reuters, 2014
* Why Your 409A Valuation is Too High – Dis-Incentive Stock Compensation in the Life Sciences – BPM White Paper, May 2013
* Modeling and Forecasting to Communicate the Biotherapeutic Value Proposition – BayBio White Paper, May 2010
* Common Stock Valuation – Tips from the Trade, BayBio NOTES, April 2010
* Defensible Equity Incentive Valuation Opinions Under IRC 409A, Company Newsletter, December 2009
* What is the IRS Doing with IRC 409A, Silicon Valley Bank Newsletter, December 2008
* Eleven of the Top Ten Mistakes to Avoid in Your Options Program, Atlanta CEO Connexions, August 2007

Instruction and Seminars

* Presentation on Valuation and Funding Strategies for Digital Health Companies at the Cedars Sinai Techstars Accelerator, October 2017
* Panelist on Valuation Issues in Early Stage Company Valuations – Fair Value Summit November 2015
* Presentation on Funding Technology Innovation to Caltech Science and Entrepreneurship Group, Pasadena, March 2015
* Presentation to accelerator programs/technology transfer group on Financing Early Stage Technologies – Navigating Valuation Discussions, UC Berkeley, October 2014
* Panelist, Funding Early Stage Ventures, Sand Hill Angels, September 2013
* Panelist on Communicating the Biotech Value Proposition, BayBio Annual Event, South San Francisco, May 2011
* Presentation on the Use of Discount Rates in the PWERM, Fair Value Forum, Palo Alto, November 2008
* Panelist on the Valuation of Biotechnology Companies, Biocom, San Diego, May 2008

Certification

I certify that, to the best of my knowledge and belief:

* The statements of fact contained in this Report are true and correct.
* The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.
* We have no present or prospective interest in the property that is the subject of this Report, and we have no personal interest with respect to the parties involved.
* We have no bias with respect to the property that is the subject of this Report or to the parties involved with this assignment.
* Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
* Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value of direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
* Our analyses, opinions and conclusions were developed, and this Report has been prepared, in conformity with the American Institute of Certified Public Accountants Statement on Standards for Valuation Services.

Sincerely,



Samuel Renwick, CFA

Exhibits

1. IRS Revenue Ruling 59-60. [↑](#footnote-ref-1)
2. Accounting Standards Codification Topic 718 – *Stock Compensation* (formerly Statement of Financial Accounting Standards No. 123R, *Accounting for Share-Based Payment*). [↑](#footnote-ref-2)
3. Source: Company website, http://pliantrx.com/#about. [↑](#footnote-ref-3)
4. Source: Company website, http://pliantrx.com/#product-engine. [↑](#footnote-ref-4)
5. Source: Information provided by Management. [↑](#footnote-ref-5)
6. Source: Company website, http://pliantrx.com/wp-content/uploads/2018/07/Pliant-Series-B-Press-Release-FINAL-1.pdf. [↑](#footnote-ref-6)
7. Source: Company website, http://pliantrx.com/wp-content/uploads/2018/05/Pliant-Therapeutics-Appoints-Hoyoung-Huh-as-Chairman.pdf. [↑](#footnote-ref-7)
8. Source: Information provided by the Management. [↑](#footnote-ref-8)
9. Source: http://appft1.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PG01&p=1&u=/netahtml/PTO/srchnum.html&r=1&f=G&l=50&s1=20180093984. [↑](#footnote-ref-9)
10. Source: Company website, http://pliantrx.com/#about. [↑](#footnote-ref-10)
11. Source: https://novojuris.com/2017/05/09/phantom-stock-options/. [↑](#footnote-ref-11)
12. Company website, http://pliantrx.com/. [↑](#footnote-ref-12)
13. Report, “Global Idiopathic Pulmonary Fibrosis Market US$ 4.6 Billion by 2023” dated April 28, 2018, https://www.ihealthcareanalyst.com/global-idiopathic-pulmonary-fibrosis-treatment-market/. [↑](#footnote-ref-13)
14. Press Release, “Global Idiopathic Pulmonary Fibrosis Market Analysis & Industry Forecast 2017-2023, With an Expected CAGR of Almost 12% - ResearchAndMarkets.com”, dated June 8, 2018, https://www.businesswire.com/news/home/20180608005345/en/Global-Idiopathic-Pulmonary-Fibrosis-Market-Analysis-Industry. [↑](#footnote-ref-14)
15. Report, “Global Cystic Fibrosis Market Report: 2028”, dated April 3, 2018, http://www.effemarket.com/global-cystic-fibrosis-market-report-2028.php. [↑](#footnote-ref-15)
16. Source: https://www.fda.gov/downloads/AboutFDA/CentersOffices/OfficeofMedicalProductsandTobacco/CDER/ReportsBudgets/UCM591976.pdf. [↑](#footnote-ref-16)
17. Source: https://www.the-nash-education-program.com/what-is-nash/. [↑](#footnote-ref-17)
18. Report, “Non-Alcoholic Steatohepatitis (NASH) Market by Drug Type, and Sales Channel - Global Opportunity Analysis and Industry Forecast, 2021-2025”, published in June 2018, https://www.alliedmarketresearch.com/nonalcoholic-steatohepatitis-NASH-market. [↑](#footnote-ref-18)
19. Report, “Global Non-Alcoholic Steatohepatitis (NASH) Market 2017-2025 - Expected to Expand at an Extraordinary 46.1% CAGR - ResearchAndMarkets.com”, dated February 12, 2018, https://www.businesswire.com/news/home/20180212005608/en/Global-Non-Alcoholic-Steatohepatitis-NASH-Market-2017-2025--. [↑](#footnote-ref-19)
20. Press Release, “Global Idiopathic Pulmonary Fibrosis Market Analysis & Industry Forecast 2017-2023, With an Expected CAGR of Almost 12% - ResearchAndMarkets.com”, dated June 8, 2018, https://www.businesswire.com/news/home/20180608005345/en/Global-Idiopathic-Pulmonary-Fibrosis-Market-Analysis-Industry. [↑](#footnote-ref-20)
21. Report, “Global Cystic Fibrosis Market Report: 2028”, dated April 3, 2018, http://www.effemarket.com/global-cystic-fibrosis-market-report-2028.php. [↑](#footnote-ref-21)
22. Report, “Non-Alcoholic Steatohepatitis (NASH) Market by Drug Type, and Sales Channel - Global Opportunity Analysis and Industry Forecast, 2021-2025”, published in June 2018, https://www.alliedmarketresearch.com/nonalcoholic-steatohepatitis-NASH-market. [↑](#footnote-ref-22)
23. Source: Information provided by Management. [↑](#footnote-ref-23)
24. Originally created in 1973, the Black‐Scholes option pricing model attempts to calculate the price of an option by considering several key factors, such as the underlying security price, exercise price, expiration date, risk‐free rate and the standard deviation of a stock’s return. Numerous assumptions underlie Black‐Scholes, including but not limited to, the log‐normal distribution of returns, and static risk‐free rates and volatility. [↑](#footnote-ref-24)
25. The binomial model was first proposed by Cox, Ross and Rubinstein in 1979, and essentially uses a “discrete-time” (lattice based) model of the varying price over time of the underlying financial instrument. In general, such models do not have closed-form solutions. [↑](#footnote-ref-25)
26. Gary R. Trugman, Understanding Business Valuation, (American Institute of Certified Public Accounts, 2002), pg 325. [↑](#footnote-ref-26)