

DAVID PLATT, Ph.D.

david@pharmalectin.com

(617)-510-2539



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This report contains forward-looking statements concerning, among other things, possible applications for marketing approval and other regulatory matters, clinical trials, plans for the development of Pharmalectin products, and business development strategies. These forward-looking statements employ terms such as 'intends, expects, plans, estimates, anticipates, should, can, and believes'. These forward-looking statements involve risks and uncertainties. Actual results may differ materially from those predicted by the forward-looking statements because of various factors and possible events. Company risks include lack of FDA or any other regulatory approval for our human products, difficulty and uncertainty in obtaining regulatory approval, uncertainty about future physician and market acceptance of our product, limited manufacturing capabilities, limited capital resources, and lack of commercial pharmaceutical experience. In addition, we are subject to industry risks including the fact that our industry is highly regulated, keenly competitive, and subject to pricing uncertainty because of third-party reimbursement issues and controls on health care spending.

CONFIDENTIAL & PROPRIETARY

The *BIG* Problem

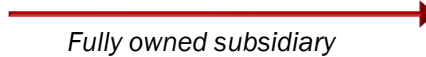


Worldwide Pandemic

- ❑ Human Toll (at 09/20/20):
 - >30,000,000 Infected
 - ~1,000,000 Fatal
- ❑ Economic Cost -32.9% US GDP in Q2 2020 and deep global recession.
- ❑ No Vaccine.
- ❑ No Approved Treatment.

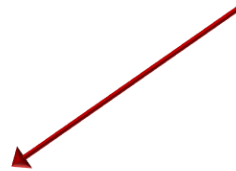
Bio₂XyTran[®] Inc.

Fully reporting
97M shares
1,350 shareholders
85% insider owned
Assets
BXT-25Rx (platform)
BXT-10Rx (platform)
MDX Viewer (platform)



PHARMALECTIN^{INC.}

Fully reporting (consolidated)
15M shares
1 shareholder
Assets
ProLectin-Rx (COVID-19 indications)
Security
BXT-101 Cancer Metastasis indication



PHARMALECTIN^{INC.}

Based on an exclusive agreement and subject to funding, Pharmalectin is a 50%-50% Joint Venture between Bioxytran, Inc. and **Pharmalectin Partners LLC**, a Special Purpose Vehicle managed by *Black Diamond Financial Group LLC*.

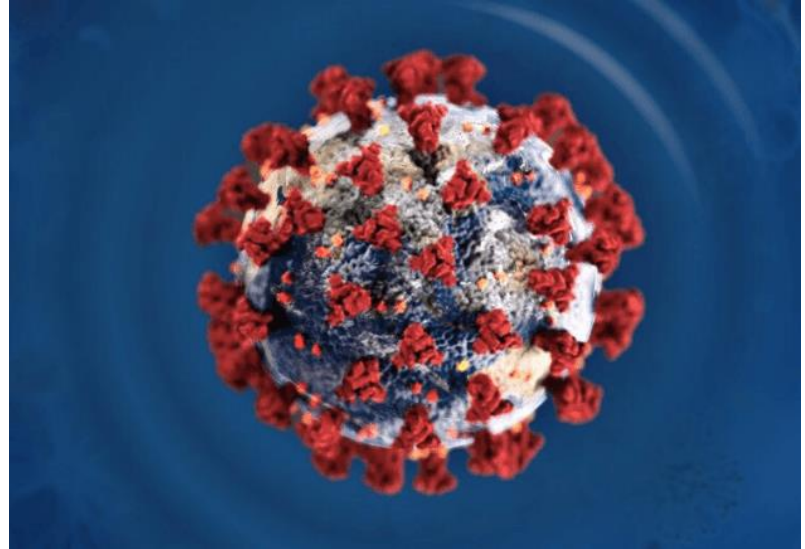
Life Cycle of a Virus



<https://www.youtube.com/watch?v=oXzwtGFyBik>

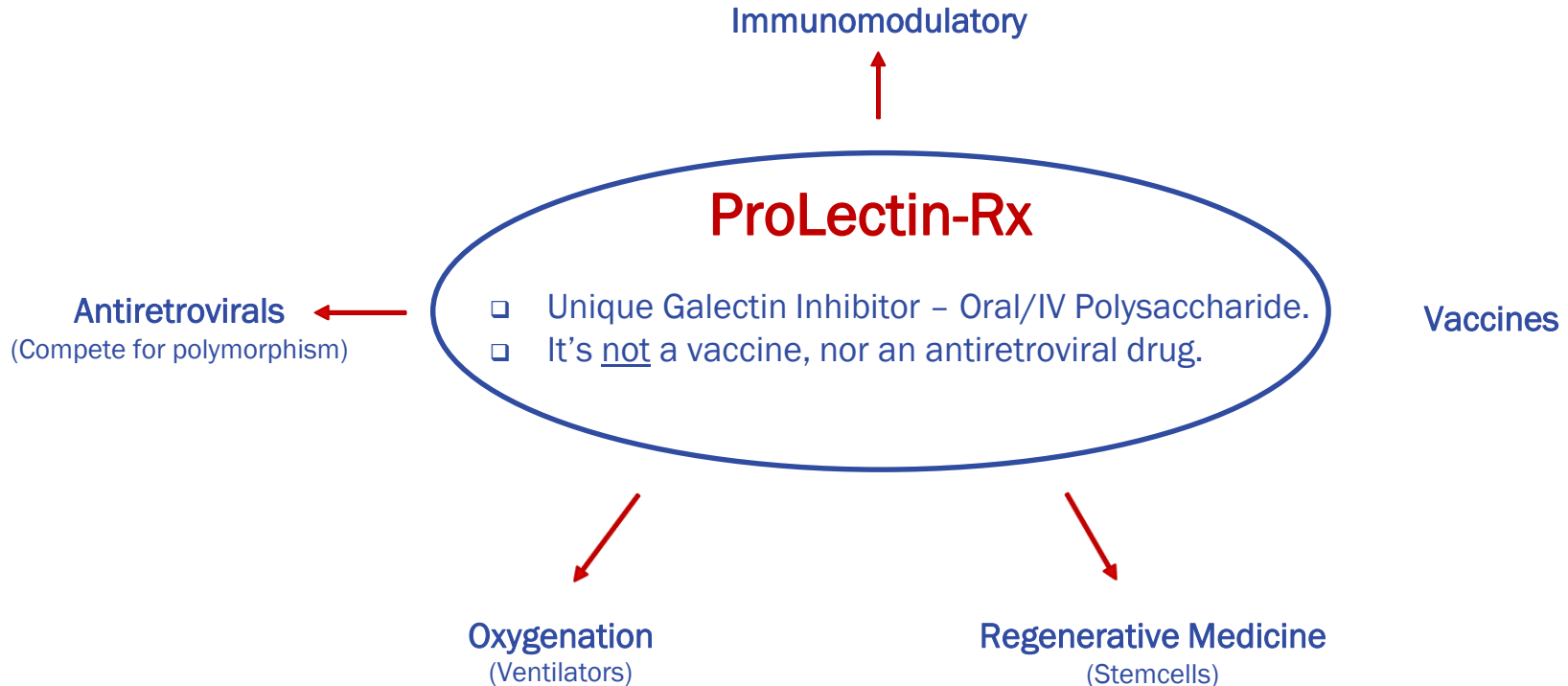
The Problems with COVID-19

- ✓ Currently No Vaccine.
- ✓ Future Vaccines Targeting 50% Effectiveness.
- ✓ Death Rate Unacceptably High.
- ✓ Permanent Fibrotic Damage to Lungs and Organs.
- ✓ No Clear Effective Treatment (early to late stage).

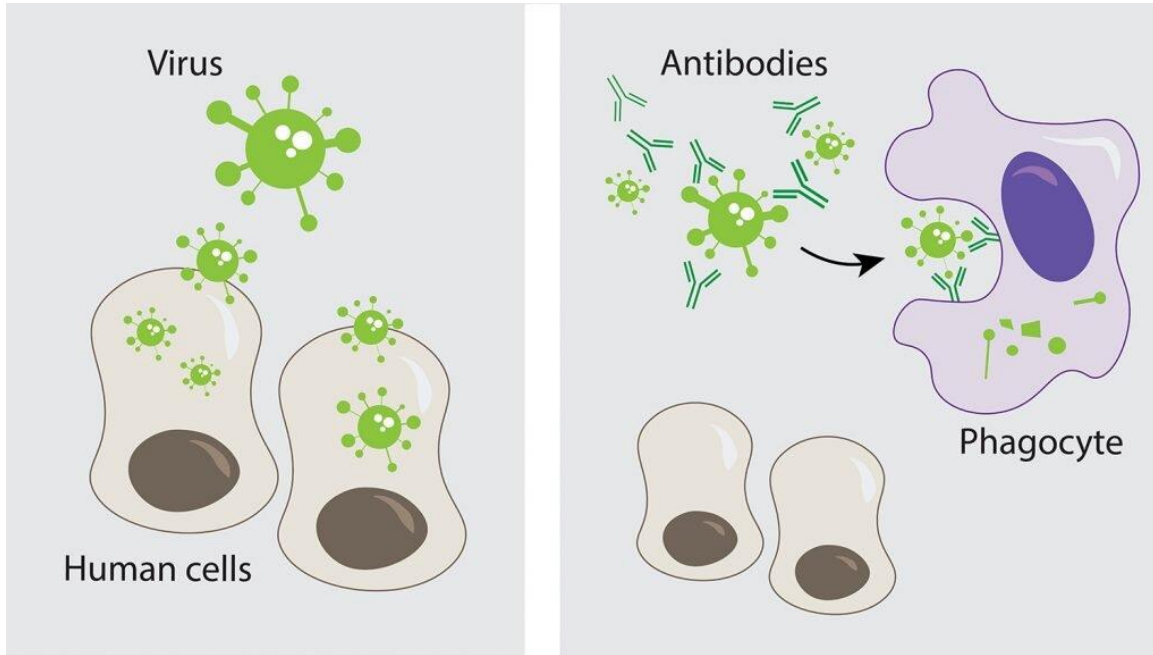


Therapeutic Approaches for COVID-19

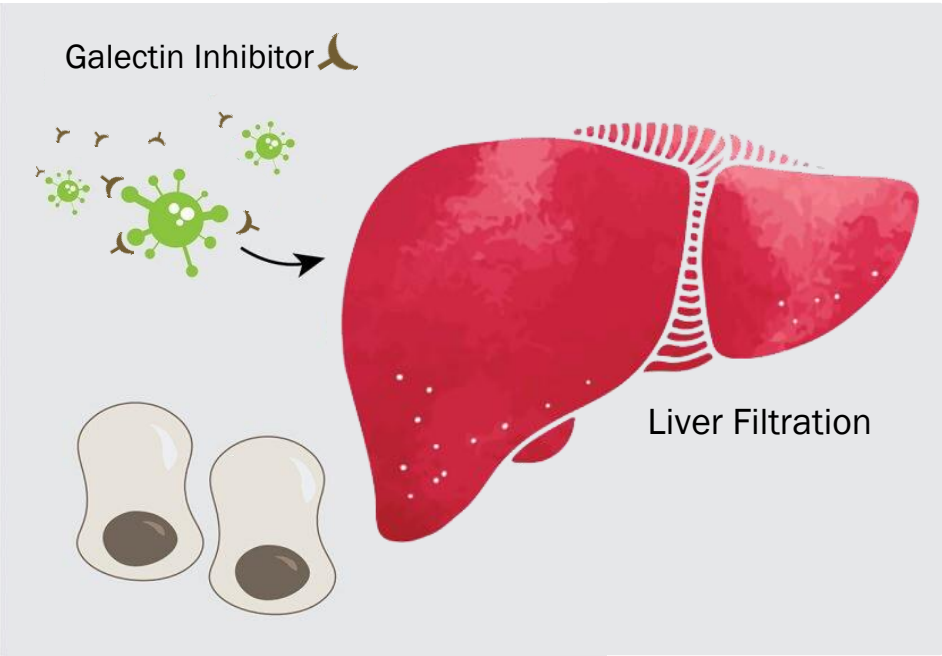
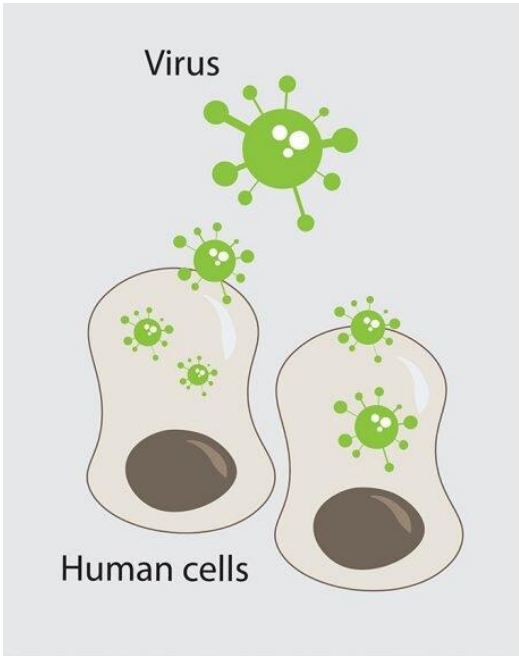
6,015 Clinical Ongoing Trials *(at 9/16/2020)*



Immune System Tags Virus for Destruction



Galectin Inhibitor Tags Virus for Elimination



Research & Development

PHARMALECTIN is an emerging biotech company repurposing an FDA approved technology and clinical trials as the base for a Platform Technology, allowing to leapfrog into Phase III clinical trials.

Description	Designation	Patients	Asset Type
Galectin Inhibitor	CLL (blood cancer)	140	Phase III

Current Status

- ❑ Predicted highly effective.
- ❑ Unique technology and IP, based on extensive know-how.
- ❑ Limited IRB clinical trial – *in progress*.
- ❑ Manufacturing – *formulation readiness*.
- ❑ FDA Fast Track Approval – *in process (IND phase III)*.



Recent Publications

AIRIT
Journal of Microbiology, Immunology and Infectious Diseases

Available at

Original Article

The role of galectins in systemic literature review

Wen-Hung Wang^{1,2}, Chh-Yen Li³,
Aspiro Nayim Urbina⁴, Wanchai
Aruneek Thittithanyanon⁵, Yen-Hi
Sheng-Fan Wang^{1,2,4}

¹ Division of Infectious Diseases, Department of Internal Medicine, National Taiwan University Hospital, Taichung Medical University, Taichung, Taiwan

² Center for Tropical Medicine and Infectious Disease Research, National Taiwan University Hospital, Taichung, Taiwan

³ Department of Medical Laboratory Science and Biotechnology, National Central University, Chungli, Taiwan

⁴ Department of Microbiology, Faculty of Science, Chulalongkornrajavidyalakul University, Bangkok, Thailand

⁵ Department of Biological Science and Technology, National Central University, Chungli, Taiwan

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KEYWORDS: Galectin; Systemic literature review; Infection; Review; PRISMA

INTRODUCTION

Galectin is a family of animal lectins that play multiple roles in their host biology. In addition to their role in the PRISMA guide

RSC Advances

Check for updates

PAPER

Check for updates

Understa potential in silico

Ashraf, Saitoh, and Maekita

The Galectin family is a group of proteins that are involved in various biological processes. In this review, we discuss the role of galectins in the pathogenesis of COVID-19. Galectins are known to be involved in the recognition and binding of viral glycoproteins. In particular, Galectin-3 has been shown to be involved in the recognition and binding of the SARS-CoV-2 spike protein. This suggests that galectins may play a role in the entry of the virus into the host cell. Furthermore, galectins have been shown to be involved in the regulation of the immune response. Galectin-3 has been shown to be involved in the regulation of the production and release of pro-inflammatory cytokines. This suggests that galectins may play a role in the host response to the virus. In conclusion, galectins are involved in various biological processes, and their role in the pathogenesis of COVID-19 is still unclear. Further research is needed to clarify the role of galectins in the pathogenesis of COVID-19.

Received 10 May 2020; accepted 10 June 2020

1. Introduction

Since the beginning of 2020 the world has been in a pandemic situation with the emergence of the novel coronavirus SARS-CoV-2 (COVID-19) as named by the World Health Organization (WHO). The pandemic, which started in Wuhan, Hubei province, China, has spread to more than 140 million people across 190 countries and is still rapidly spreading. It has become the most serious pandemic in over 70 years. The pathogenesis of COVID-19 is largely unknown. It has been proposed that COVID-19 is caused by genetic recombination of SARS-CoV-2 and other coronaviruses. However, the exact mechanism of the virus entry and its replication remains unclear. Galectins are a family of animal lectins that play multiple roles in their host biology. In particular, Galectin-3 has been shown to be involved in the recognition and binding of viral glycoproteins. In particular, Galectin-3 has been shown to be involved in the recognition and binding of the SARS-CoV-2 spike protein. This suggests that galectins may play a role in the entry of the virus into the host cell. Furthermore, galectins have been shown to be involved in the regulation of the immune response. Galectin-3 has been shown to be involved in the regulation of the production and release of pro-inflammatory cytokines. This suggests that galectins may play a role in the host response to the virus. In conclusion, galectins are involved in various biological processes, and their role in the pathogenesis of COVID-19 is still unclear. Further research is needed to clarify the role of galectins in the pathogenesis of COVID-19.

Frontiers Research

Check for updates

Immunopathology of galectin target in COVID-19 [version 1]

John L. Caniglia¹, Swapna Asuthkar², Kiran K. Velgula^{1,2,4}

¹ Department of Cancer Biology and Pharmacology, University of Illinois at Chicago, Chicago, IL, USA

² Department of Immunology, University of Illinois at Chicago, Chicago, IL, USA

³ Department of Pathology, University of Illinois at Chicago, Chicago, IL, USA

⁴ Department of Biotechnology, University of Illinois at Chicago, Chicago, IL, USA

Received 01 May 2020; accepted 01 May 2020

ABSTRACT

The pandemic brought on by the outbreak of new coronavirus SARS-CoV-2 (COVID-19) has become a global health crisis, with over 22 million confirmed cases and 770,000 deaths worldwide. COVID-19 is a direct result of genetic recombination between SARS-CoV-2 and other coronaviruses. The pathogenesis of COVID-19 is largely unknown. It has been proposed that COVID-19 is caused by genetic recombination of SARS-CoV-2 and other coronaviruses. However, the exact mechanism of the virus entry and its replication remains unclear. Galectins are a family of animal lectins that play multiple roles in their host biology. In particular, Galectin-3 has been shown to be involved in the recognition and binding of viral glycoproteins. In particular, Galectin-3 has been shown to be involved in the recognition and binding of the SARS-CoV-2 spike protein. This suggests that galectins may play a role in the entry of the virus into the host cell. Furthermore, galectins have been shown to be involved in the regulation of the immune response. Galectin-3 has been shown to be involved in the regulation of the production and release of pro-inflammatory cytokines. This suggests that galectins may play a role in the host response to the virus. In conclusion, galectins are involved in various biological processes, and their role in the pathogenesis of COVID-19 is still unclear. Further research is needed to clarify the role of galectins in the pathogenesis of COVID-19.

PeerJ

A potential role for Galectin-3 inhibitors in the treatment of COVID-19

John L. Caniglia¹, Maheshwari R. Gada², Swapna Asuthkar¹, Andrew J. Tang¹, and Kiran K. Velgula^{1,2,4}

¹ Department of Cancer Biology and Pharmacology, University of Illinois at Chicago, Chicago, IL, USA

² Department of Immunology, University of Illinois at Chicago, Chicago, IL, USA

³ Department of Pathology, University of Illinois at Chicago, Chicago, IL, USA

⁴ Department of Biotechnology, University of Illinois at Chicago, Chicago, IL, USA

Received 01 May 2020; accepted 01 May 2020

ABSTRACT

The outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of coronavirus disease 2019 (COVID-19), has been declared a global pandemic by the World Health Organization. With no standard of care for the treatment of COVID-19, there is an urgent need to identify therapies that may be effective in treatment. Recent evidence has implicated the development of cytokine release syndrome as the major cause of mortality in COVID-19 patients, with elevated levels of interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF-α) observed in patients. Galectin-3 (Gal-3) is an animal lectin that has been implicated in the disease process of a variety of inflammatory conditions. Inhibitors of the small molecule Gal-3 have been shown to reduce the levels of both IL-6 and TNF-α in vitro and have shown anti-inflammatory effects in vivo. Additionally, a key domain in the sugar portion of α-mannosidase, a gene which includes SARS-CoV-2, is highly identical in morphology to human Gal-3. These sugar proteins are critical for the viral entry into host cells. Here we provide a systematic review of the available literature and an impetus for further research on the use of Gal-3 inhibitors in the treatment of COVID-19. Further, we propose a dual mechanism by which Gal-3 inhibitors may be beneficial in the treatment of COVID-19, both suppressing the host inflammatory response and impeding viral attachment to host cells.

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Corresponding author: Kiran K. Velgula, velgula@uic.edu

Additional Information and Declarations: Additional Information and Declarations are available at <https://doi.org/10.7554/peerj.10000>

INTRODUCTION

With the ongoing pandemic attributed to the pathogenic severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), there is an urgent need to identify effective treatment options (Chen *et al.*, 2020). Numerous treatments, most notably the antiviral agents remdesivir and the antiplatelet drug chloroquine, have been extensively studied with inconclusive results (Zhou *et al.*, 2020; Liu *et al.*, 2020). The current absence of a proven, effective anti-viral therapy has resulted in anti-inflammatory agents such as interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF-α) inhibitors being proposed to modulate symptoms (Petrova *et al.*, 2020). The rationale is largely based on the finding

Can We Trust Big Pharma to Find a Cure for COVID-19?

THEIR/2020/07/07

The pharma answer to COVID-19 to date has only been **remdesivir**, and all it did was reduce the hospital stay by 4 days. Early in the pandemic, getting people out of the hospital as soon as possible was a key goal of flattening the curve. Additionally, the only drug the government was able to offer citizens was remdesivir, a costly, unproven drug (especially for lower-income and lower-middle class). It took weeks for the FDA to approve remdesivir as a treatment for COVID-19. It took 200+ pharmaceutical companies to get the approval that they have never before. At the time, people needed to know if they got remdesivir there was any benefit. It took weeks for the FDA to approve remdesivir as a treatment for COVID-19. It took 200+ pharmaceutical companies to get the approval that they have never before. At the time, people needed to know if they got remdesivir there was any benefit. It took weeks for the FDA to approve remdesivir as a treatment for COVID-19. It took 200+ pharmaceutical companies to get the approval that they have never before. At the time, people needed to know if they got remdesivir there was any benefit.

The US Government has spent over \$10 billion through Operation Warp Speed (OWS) on a public-private partnership focused on ensuring the manufacturing supply of promising vaccines and drug operations should they receive an Emergency Use Authorization (EUA). It's helpful to publicly see what they have been up to. Although the graph is flawed, the proportionality still stands. The government in all its on vaccines and has pretty much given up on any hope of therapeutic to cure the disease.

US government's Covid-19 Funding

Area	Number of projects	Amount
Vaccines	100	\$10.0 billion
Therapeutics	10	\$1.0 billion
Diagnostic	10	\$1.0 billion
Prevention	10	\$1.0 billion
Other	10	\$1.0 billion
Total	140	\$14.0 billion

Remdesivir is a key in the race to find a treatment or vaccine for COVID-19, so it is interesting to see where the money is going and who is getting it. All you will see in the following chart is pure drugs in big pharma and vaccines. While there might be some **remdesivir** big pharma because it doesn't have any drug approval, but it does have a 527 billion market capitalization.

The US Government has spent over \$10 billion through Operation Warp Speed (OWS)

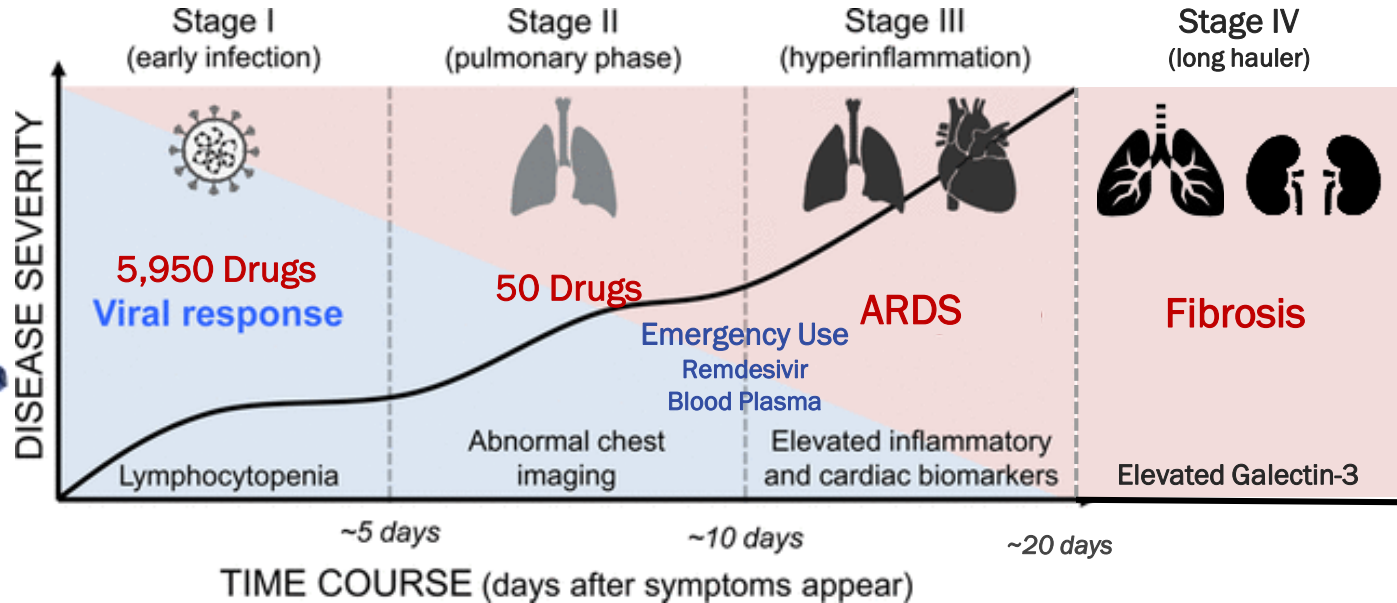
- ❑ Focused on ensuring the manufacturing supply of promising vaccines.
- ❑ Entirely directed to big pharma.

2020 Peer Reviewed Articles Galectin and COVID-19

- ❑ The role of galectins in virus infection - A systematic literature review.
- ❑ Immunopathology of galectin-3 an increasingly promising target in COVID-19.
- ❑ Understanding the role of galectin inhibitors as potential candidates for SARS-CoV-2 spike protein.
- ❑ A potential role for Galectin-3 inhibitors in the treatment of COVID-19.

End-to-End Solution

PHARMALECTIN ^{INC} Treatment	ProLectin-M Oral	ProLectin-I Intravenous	ProLectin-A Intravenous*	ProLectin-F Intravenous
*Combination			MDX-Viewer	



Prolectin-M in COVID-19 Patients Having Mild to Moderate Symptoms Not Requiring Oxygen Support. (Prolectin-M)

The safety and scientific validity of this study is the responsibility of the study sponsor and investigators. Listing a study does not mean it has been evaluated by the U.S. Federal Government. [Know the risks and potential benefits](#) of clinical studies and talk to your health care provider before participating. Read our [disclaimer](#) for details.

ClinicalTrials.gov Identifier: NCT04512027

Recruitment Status: Not yet recruiting
First Posted: August 13, 2020
Last Update Posted: August 27, 2020
See [Contacts and Locations](#)

Sponsor:
Composite Interceptive Med Science

Collaborator:
Pharmalectin Inc., a subsidiary of Bioxytran Inc

Information provided by (Responsible Party):
Composite Interceptive Med Science

Study Details Tabular View No Results Posted Disclaimer How to Read a Study Record

Study Description

Go to

Brief Summary:

A randomised controlled trial of open label Prolectin-M; a (1-6)-alpha-D-Mannopyranose among patients with RT PCR positive COVID-19 patients.

Condition or disease	Intervention/treatment	Phase
COVID-19	Other: Prolectin-M; a (1-6)-alpha-D-Mannopyranose class Other: Standard of Care	Not Applicable

Detailed Description:

SarsCoV2 has infected over 20 million people worldwide. The virus has a unique protein structure enabling it to rapidly infect and spread among the population. COVID19 is a global health emergency and has affected lives of all people irrespective of being infected. There are no proven therapies and a vaccine is yet to be approved for wide public usage.

Our study aims to test a hypothesis of physically blocking the spike protein from infecting the human cells, thus promoting its rapid excretion from the infected person.

We will randomise 10 subjects in this proof of concept trial and test the hypothesis by measuring the effect of Prolectin-M; a (1-6)-alpha-D-Mannopyranose in reducing the viral copy numbers over 5 days of

- Admittance completed on 9/19/20.
- Early Stage COVID-19 Patients.
- Reduction of Viral Load.
- Time to Full Recovery.

CEO David Platt PhD: carbohydrate chemistry expert, founded four publicly traded companies, raised \$150m in public markets, created \$1B in shareholder value, and led development of two drug candidates from concept through to Phase II clinical trials.

CFO Ola Soderquist CPA, MSA, MBA: >30 years multi-industry financial experience.

EVP BD Mike Sheikh: >10 years of business development in life sciences. Broker and Research Analyst.

PM Dir Veronika Tyukova MBA: >15 years of PM in Hi-Tech, Manufacturing and Commercialization.

Director Anders Utter MBA: Audit Committee Chair, >25 years of managerial finance and accounting in medical devices and manufacturing.

Director Alan Hoberman PhD: Executive Director of Site Operations and Toxicology at Charles River Laboratories.

Director Henry Esber PhD: >35 years experience in oncology, tumor immunology, immunotherapy, toxicology and regulatory affairs.

Director Dale Conaway DVM: Veterinary Medical Officer, Federal Research.

Medical Advisor Avraham Mayevsky PhD: worldwide authority in the field of minimal invasive monitoring of tissue and organ physiology; and professor at the Faculty of Life Sciences, Bar-Ilan University, Israel.

Medical Advisor Juan Carlos Lopez-Talavera PhD: >20 years of experience in the biopharma industry, with extensive expertise in liver and gastrointestinal diseases.

Medical Advisor Hana Chen-Walden MD: >30 years experience in pharmaceutical regulatory affairs in US and Europe.

Time-line and Budget

Product	Month 2	Month 4	Month 6
ProLectin-M	CMC TOX IND	Phase II/III	Licensing
ProLectin-I	CMC TOX IND		
ProLectin-F		CMC TOX Pre-IND	
ProLectin-A		GLP	

in million USD	ProLectin-Rx
CMC/Manufacturing	\$ 1.1
Toxicity screening	\$ 0.6
IND submission	\$ 0.2
Clinical trials	\$ 2.1
Licensing	---
Overhead (25%)	\$ 1.0
Preliminary Budget	\$ 5.0

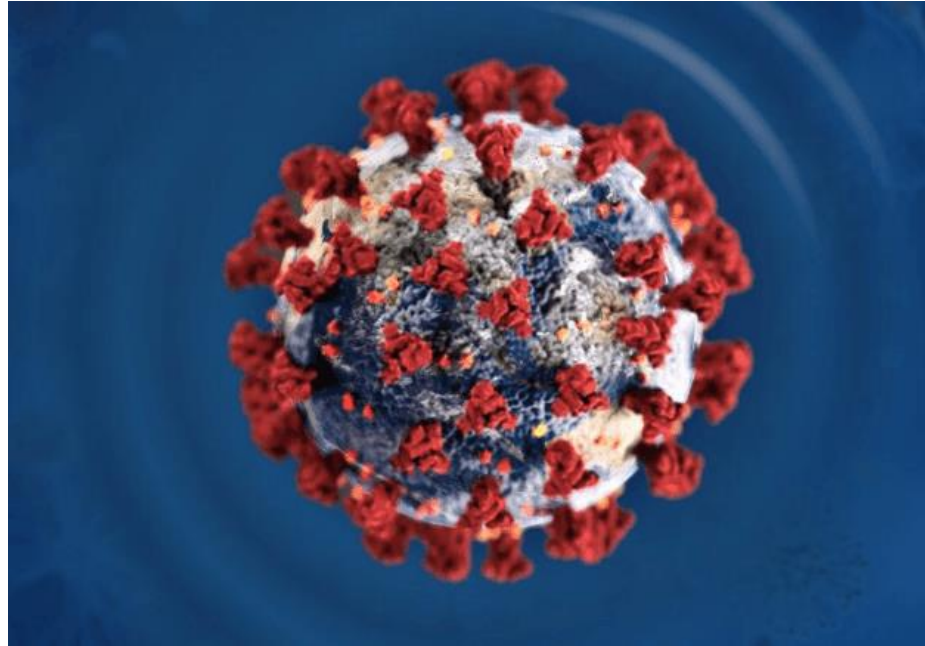
Comparative Valuation

Galecto Biotech a Swedish private biotechnology company was founded in 2011.

They are developing a galectin-3 inhibitor, TD139, to treat idiopathic pulmonary fibrosis (IPF), which is a progressive, irreversible and ultimately fatal lung disease that has poor prognosis and no effective therapies.

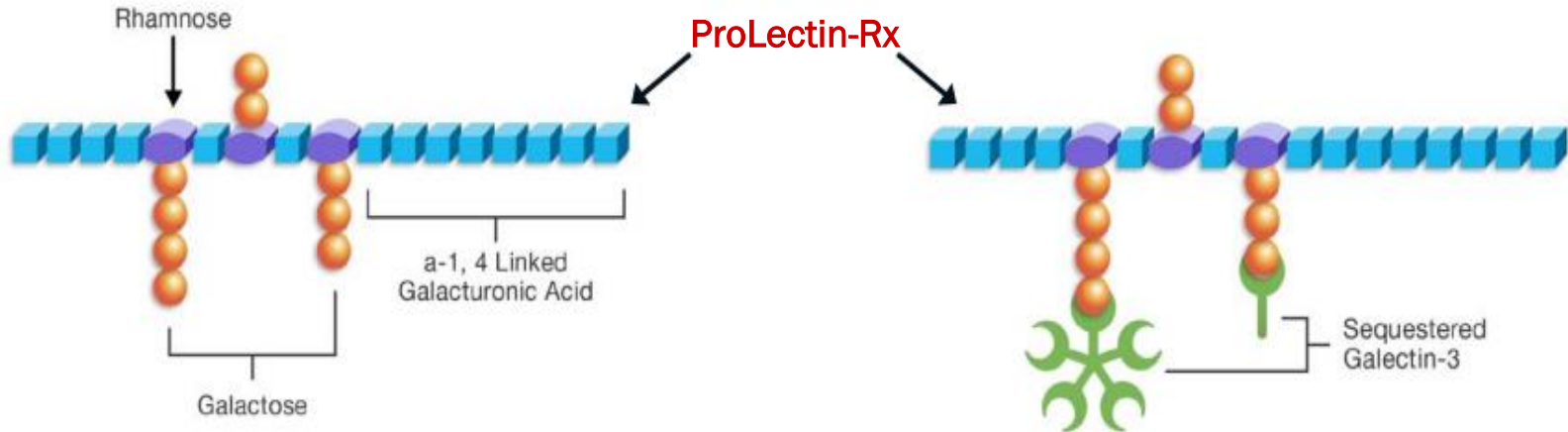
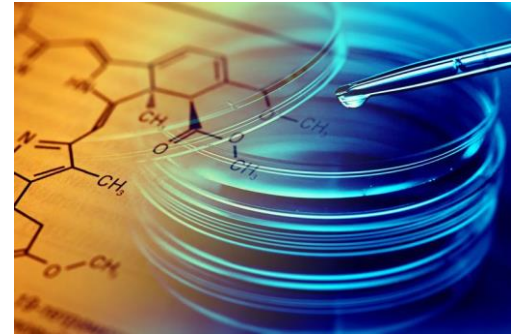
In their C-round Galecto Biotech raised \$95M with Ysios Capital and Orbimed in 2018, while in Phase II. They were offered a buy-out by Bristol Myers Squibb in 2019, the size of the deal was \$444M.

appendix



Galectin Inhibitor Rx Drug Candidate

- ❑ Blocks virus entry to human cells by binding to coronavirus spike-protein.
- ❑ Expected to improve innate and adaptive immune system responses.
- ❑ May provide protection against SARS-CoV-2 exposure, as well as being an effective treatment.

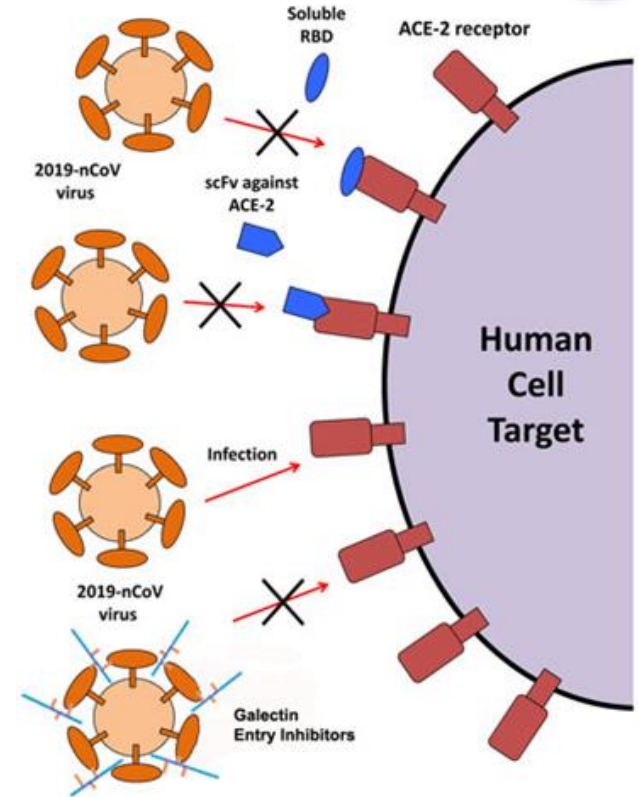


Specific quantitative benefits to be established in trials.

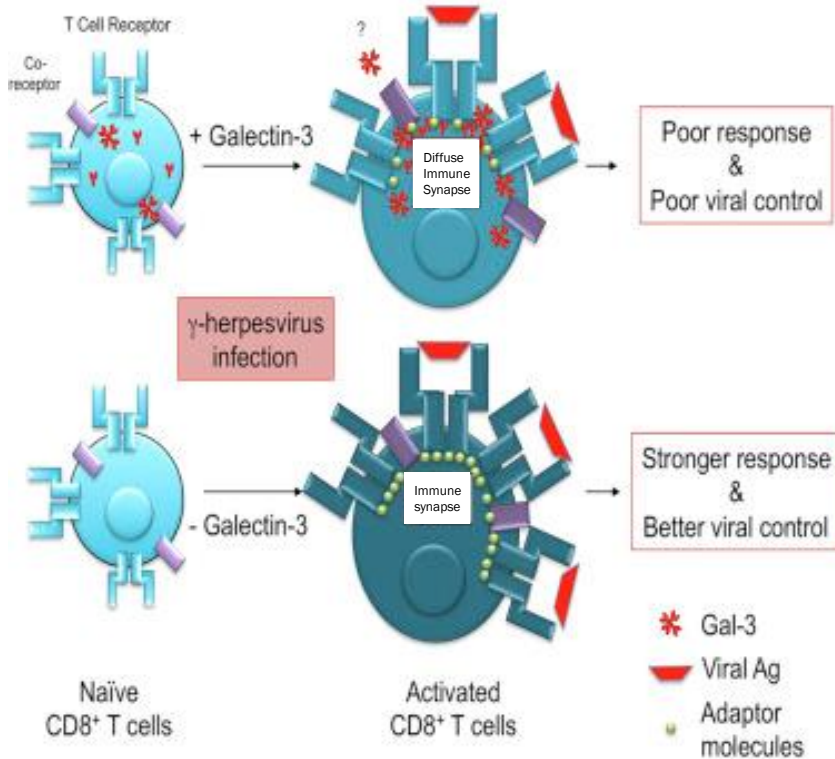
Antiviral - Block Cell or Virus?

Mechanisms of Action

- ❑ Bind to the virus acting as an entry inhibitor.
- ❑ Binding to the virus soaks up the virion and the liver filters the galectin inhibitor with virion attached.
- ❑ Throttle the trafficking of macrophages to the site of infection.
- ❑ Remove plaque on T-cells results in improved response.



Immunomodulatory



Improved Immune Response

- ❑ High Galectin-3 forms plaque on the T-cell resulting in poor viral control.
- ❑ Removing Galectin-3 results in improved viral control.
- ❑ Eliminates T-cell anergy and Galectin effect which is also prevalent in cancer.