UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): April 13, 2016

ATYR PHARMA, INC.
(Exact name of registrant as specified in its charter)

Delaware	001-37378	20-3435077
(State or other jurisdiction of incorporation)	(Commission File Number)	(I.R.S. Employer Identification No.)

3545 John Hopkins Court, Suite #250
San Diego, CA 92121

(Address of principal executive offices, including zip code)

(858) 731-8389
(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 7.01 Regulation FD Disclosure.

aTyr Pharma, Inc. (the "Company") intends to use an investor presentation to conduct meetings with investors, stockholders and analysts and at investor conferences, and which the Company intends to place on its website. A copy of the presentation materials is attached hereto as Exhibit 99.1. The Company does not undertake to update the presentation materials.

The information under this Item 7.01, including Exhibit 99.1, is being furnished and shall not be deemed "filed" for the purposes of Section 18 of the Securities and Exchange Act of 1934, as amended, or the Exchange Act, or otherwise subject to the liabilities of that section, nor shall they be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Corporate Presentation Materials of aTyr Pharma, Inc. dated April 2016

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: April 13, 2016

aTyr Pharma, Inc.

By: /s/ John D. Mendlein
John D. Mendlein, Ph.D.
Chief Executive Officer

EXHIBIT INDEX

Exhibit No.	Description
99.1	Corporate Presentation Materials of aTyr Pharma, Inc. dated April 2016

Building a New Class of Medicines - Physiocrine Based Therapeutics

1st Rare Disease Trial Completed - New Hope for Muscular Dystrophy Patients

April 2016

aTyr Pharma
Brave Science, Meaningful Medicines

Forward-Looking Statements

The following slides and any accompanying oral presentation contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. The use of words such as "may," "might," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "project," "intend," "future," "potential," "opportunity," or "continue," and other similar expressions are intended to identify forward-looking statements. For example, all statements we make regarding the potential therapeutic benefits of Physiocrines and our product candidates, including Resolaris™ and iMod. Fc, the ability to successfully advance our pipeline or product candidates, the timing within which we expect to initiate, receive and report data from, and complete our planned clinical trials, and our ability to receive regulatory approvals for, and commercialize, our product candidates, our ability to identify and discover additional product candidates, and the ability of our intellectual property portfolio to provide protection are forward-looking statements. All forward-looking statements are based on estimates and assumptions by our management that, although we believe to be reasonable, are inherently uncertain. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that we expected. These risks, uncertainties and other factors are more fully described in our filings with the U.S. Securities and Exchange Commission, including our most recent Annual Report on Form 10-K. The forward-looking statements in this presentation speak only as of the date of this presentation and neither we nor any other person assume responsibility for the accuracy and completeness of any forward-looking statement. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

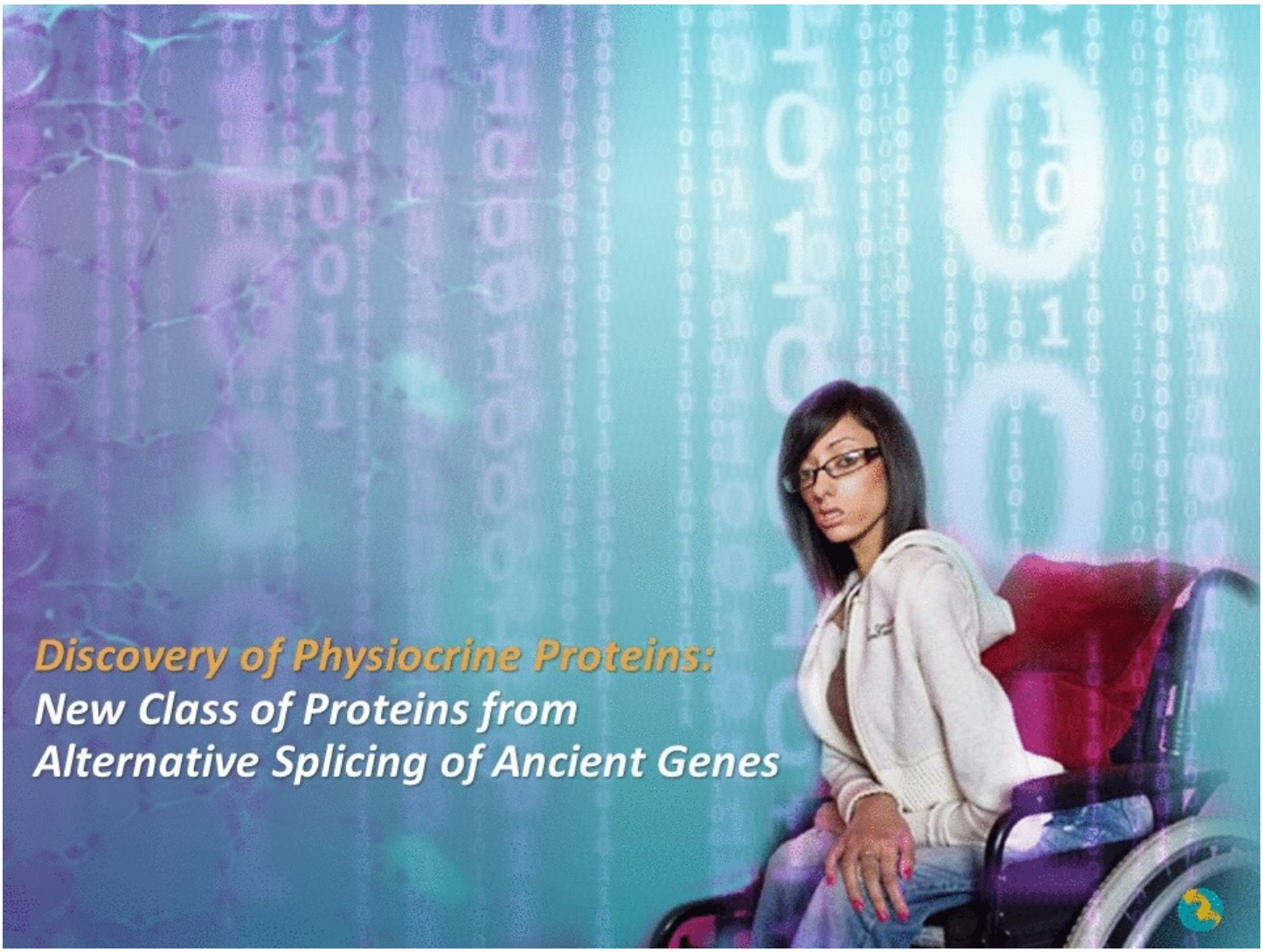
We own various U.S. federal trademark applications and unregistered trademarks, including our company name and Resolaris™. All other trademarks or trade names referred to in this presentation are the property of their respective owners. Solely for convenience, the trademarks and trade names in this presentation are referred to without the symbols ® and ™, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

Augmenting Natural Homeostatic Pathways in Patients with Rare Diseases of Muscle & Lung

ATYR HIGHLIGHTS

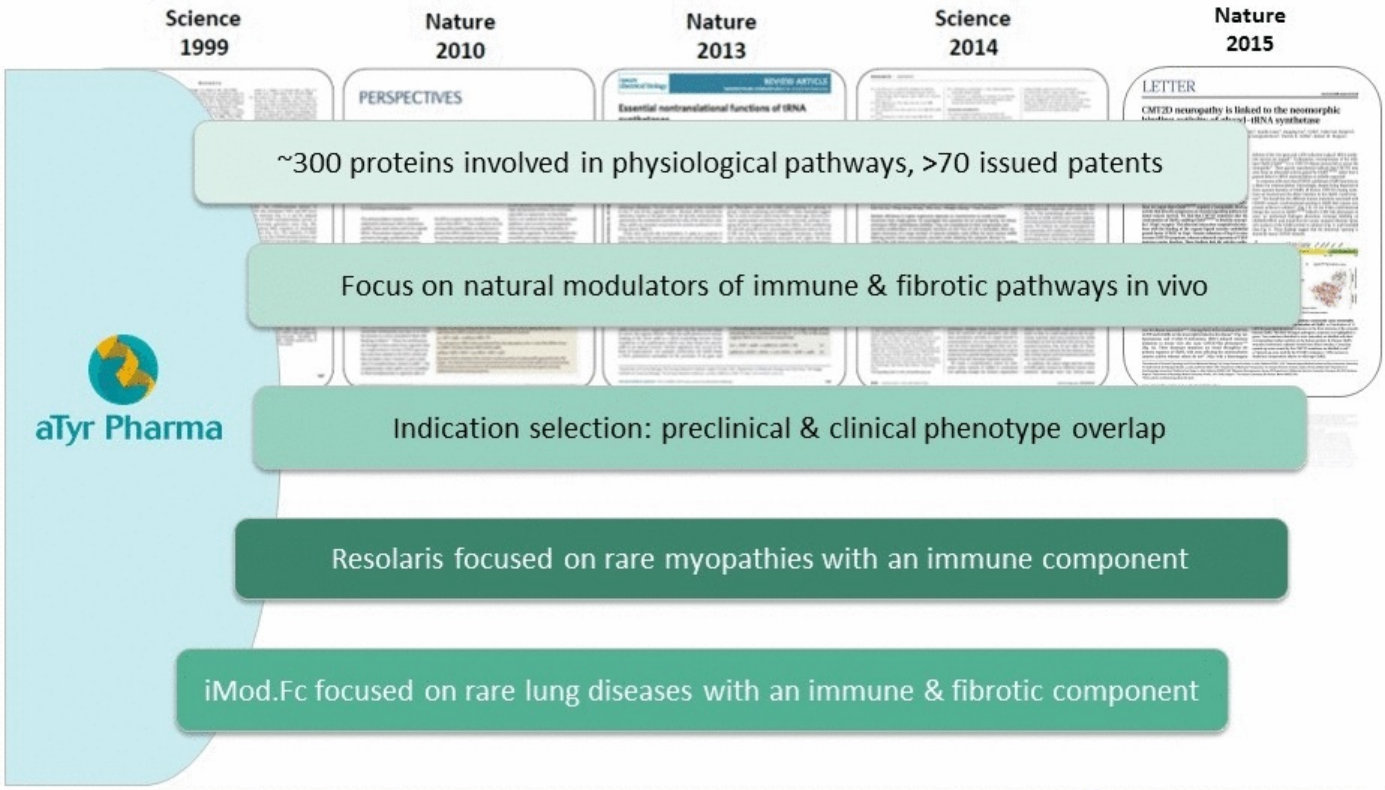
Physiocrine* Disruptive Opportunity	Pioneering new biology, yielding new therapeutic intervention points	Focusing on natural modulators of immune & fibrotic pathways
Resokine: One Pathway Many Rare Diseases	Connecting Immune/fibrotic nexus to rare muscle & lung diseases	Dose above normal levels to therapeutically promote tissue homeostasis & restoration
Resolaris Encouraging Phase 1b/2 Data	1st muscular dystrophy trial completed 3 ongoing trials in muscular dystrophies	1st safety & tolerability data in patients 1st potential activity signal in FSHD
Autonomous Pipeline & Business Model	1st in class biologics pipeline 2nd Program iMod.Fc for lung disease	Unique investment thesis: build franchises in muscle, lung & liver based on new biology

Proteins for life (physio) specific activity (crine)


Discovery of Physiocrine Proteins:
New Class of Proteins from
Alternative Splicing of Ancient Genes

aTyr Pioneering the New Biology of Physiocrines

THERAPEUTICALLY TAPPING NOVEL PATHWAYS



~300 proteins involved in physiological pathways, >70 issued patents

Focus on natural modulators of immune & fibrotic pathways in vivo

Indication selection: preclinical & clinical phenotype overlap

Resolaris focused on rare myopathies with an immune component

iMod.Fc focused on rare lung diseases with an immune & fibrotic component

Properties of Physiocrines

Potential for novel physiological modulation in disease

At least 14/23 tRNA Synthetase family with known disease connections

Clinical phenotypes suggest potential for tissue-by-tissue homeostasis products

Extracellular functions of 4 billion year old gene family, tRNA Synthetases

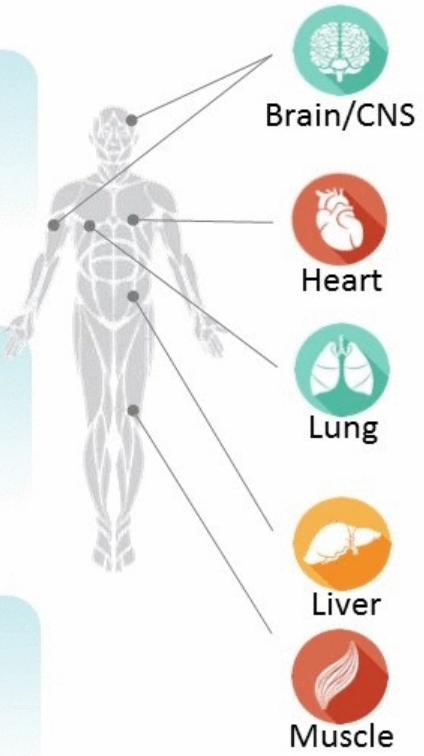
Genes yield ~300 proteins (e.g. alternative splicing, etc.) of new function

Potential new class of modulators of tissue homeostasis

Work via GPCRs, TLRs, cytokine receptors & other proteins

Not glycosylated & non-canonical leader sequences

Size range 40-500AA



Leadership Team

EXPERIENCED
INDUSTRY VETERANS

John Mendlein, Ph.D.
Chief Executive Officer

moderna · Adnexus · Aurora Biosciences Corporation · SK&F

Sanuj Ravindran, M.D.
Chief Business Officer

The Medicines Company · Asian Health Care Fund · RADIUS · Burrill & Company

Sanjay Shukla, M.D.
Chief Medical Officer

NOVARTIS · RxMD Strategic Execution in Clinical Development · Vifor Pharma

Andrew Cubitt, Ph.D.
VP, Product Protection and Interim Head of Research

AnaptysBio · xceptor · Aurora Biosciences Corporation

Kelly Blackburn
VP, Clinical Operations

VERTEX · Millennium · Wyeth · Genetics Institute

Ashraf Amanullah, Ph.D.
VP, Manufacturing

Genentech · GILEAD · MERCK

John Blake, CPA
VP, Finance

VOLCANO · BD

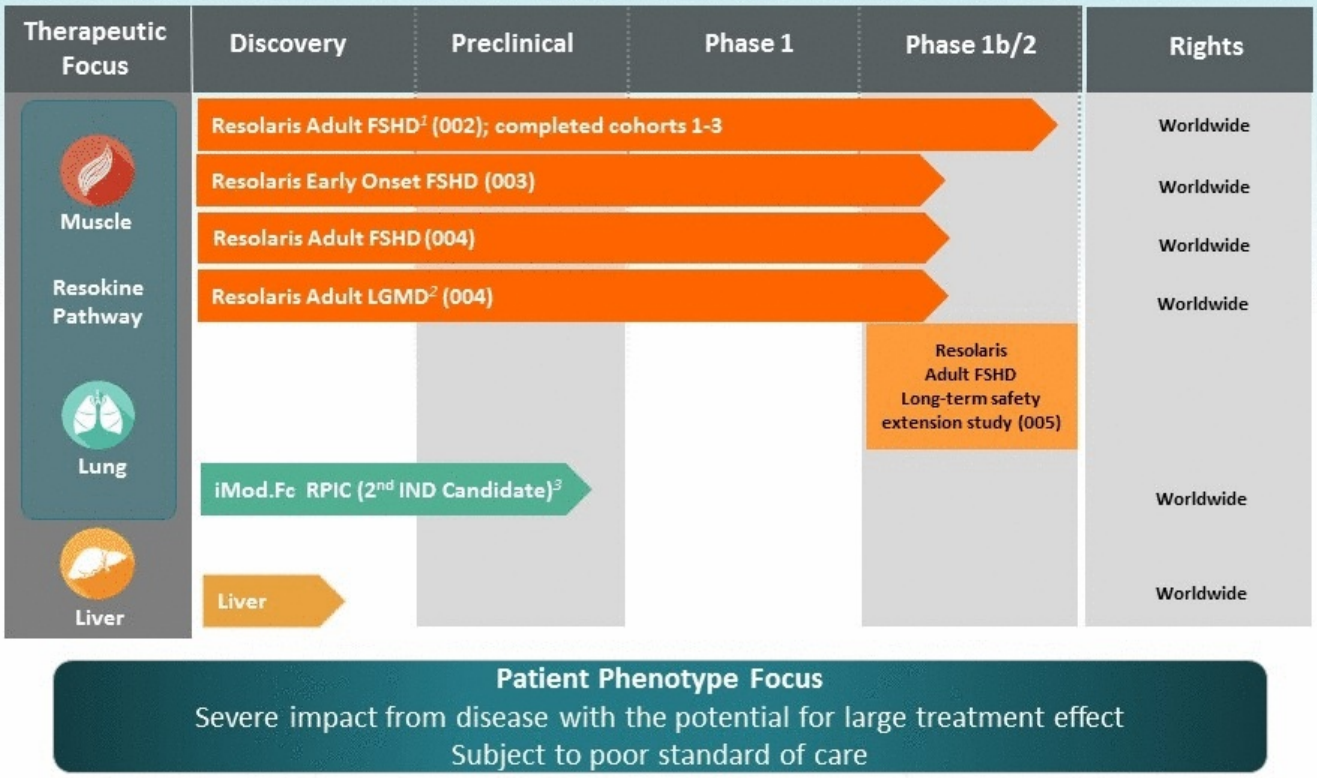
Holly D. Chrzanowski
VP, Enterprise Talent & Organization

VERTEX · Aurora Biosciences Corporation

Immuno/Fibrosis Modulation Pipeline

1st in class candidates for rare diseases with an immune or fibrotic component

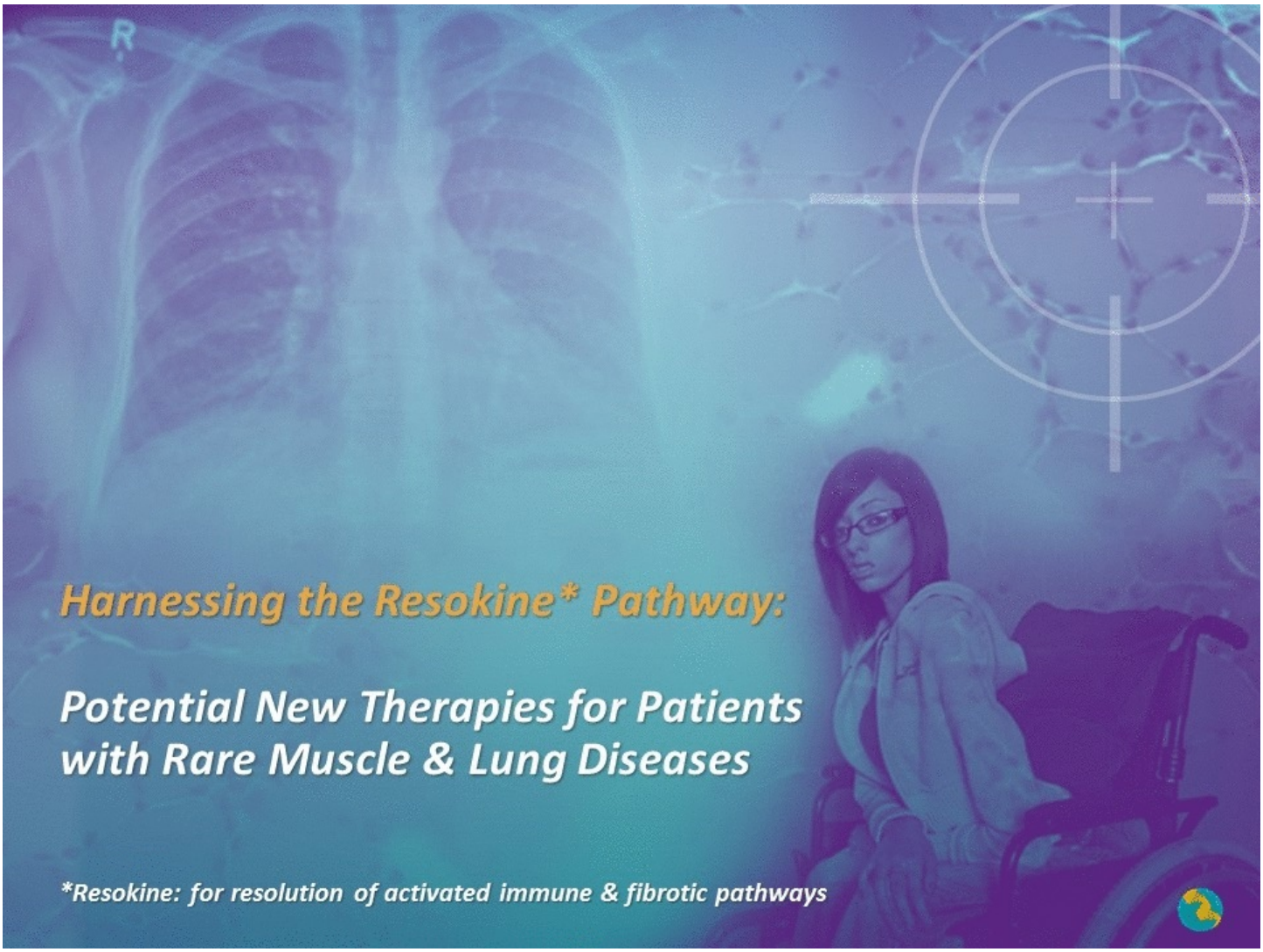
PARADIGM SHIFT IN TREATMENTS



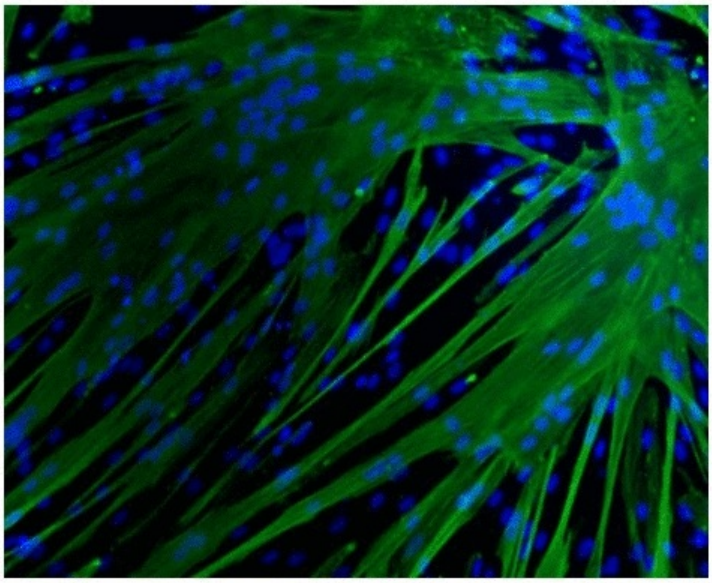
Patient Phenotype Focus

Severe impact from disease with the potential for large treatment effect
Subject to poor standard of care

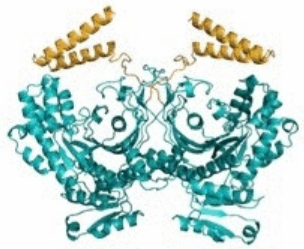
[1] *Facioscapulohumeral Muscular Dystrophy*
[2] *Limb-girdle Muscular Dystrophy*
[3] *RPIC: Rare pulmonopathies with an immune component, including Interstitial Lung Disease*


Harnessing the Resokine* Pathway:
Potential New Therapies for Patients with Rare Muscle & Lung Diseases
*Resokine: for resolution of activated immune & fibrotic pathways

Resokine Released
From Human Primary Skeletal Muscle Cells



IGF1 Facilitated Differentiation
Human Skeletal Muscle



Resokine Released from
Human Skeletal Muscle

Molecules of the Resokine Pathway

New hope for rare muscle & lung disease patients

Resokine* Pathway Discovery:

- Clinical correlates: myopathies & lung diseases where we believe the pathway is disrupted
- Immuno-modulatory & fibro-modulatory activity via in vivo screening

Therapeutic applications in patients with similar phenotype:

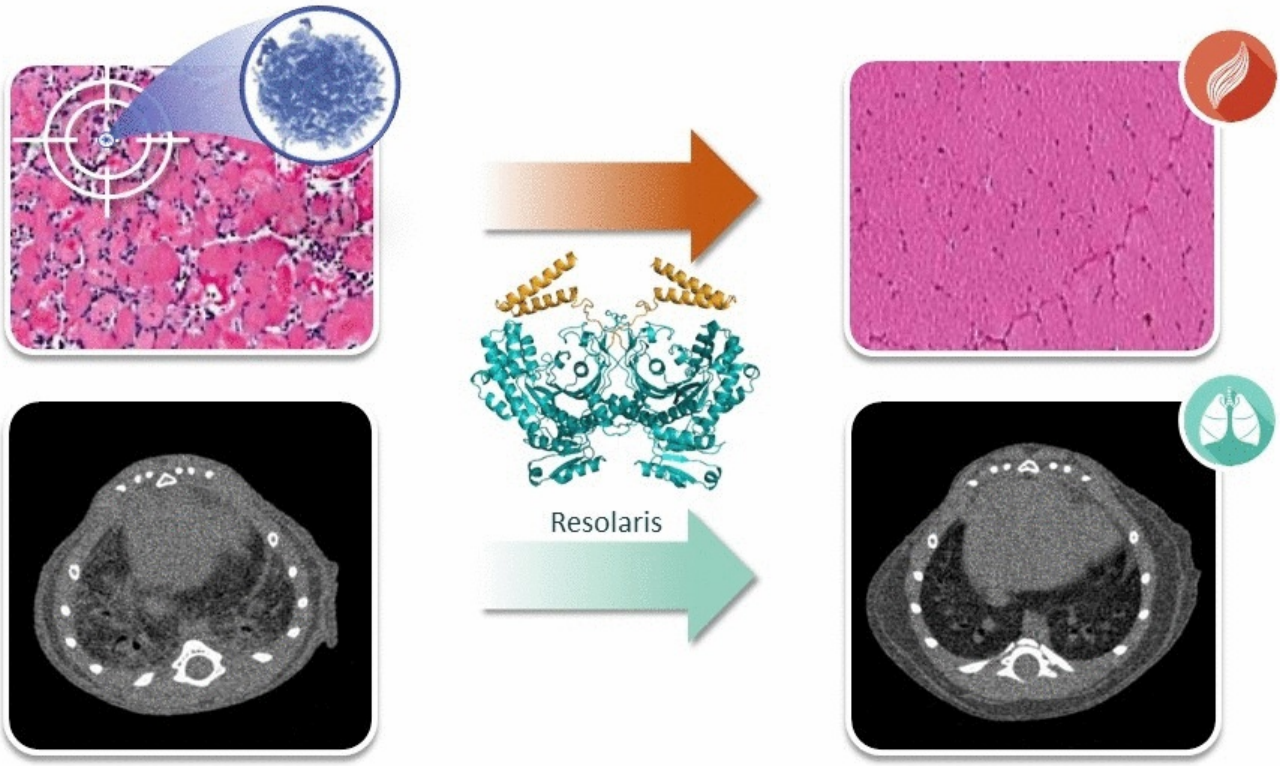
- Rare myopathies with an immune component (RMICs)
- Rare pulmonopathies with an immune component (RPICs)

*Resokine (name for extracellular HARS, a tRNA Histidyl Synthetase)

**Zhou et al, JBC, 2014

Resolaris Improves Muscle & Lung Immune/Fibrotic Components

Two weeks of therapeutic treatment in Statin myopathy & Bleomycin IPF models*



**Idiopathic Pulmonary Fibrosis ("IPF"), a subset of Interstitial Lung Disease ("ILD")*

Clinical Path for Resolaris & iMod.Fc

Staging Rare Muscle & Lung Disease Indications

DEVELOPING A NEW CLASS OF PRODUCTS

1st Physiocrine based therapeutics to promote homeostasis

Resolaris

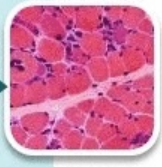
Exploratory stage trials in rare diseases

iMod.Fc

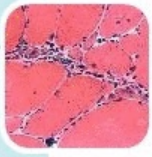
Establish & explore:

1. Safety, tolerability
2. Activity/end-point potential

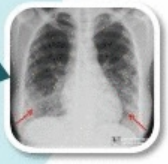
Adult
FSHD 1b/2
Trial Completed



Early Onset FSHD
1b/2 underway



Adult Limb Girdle
Muscular Dystrophy
1b/2 underway



Severe Rare
Lung Diseases

On track for 2017
clinical trial

Multiple opportunities for advancement

For patients with few or no treatment options

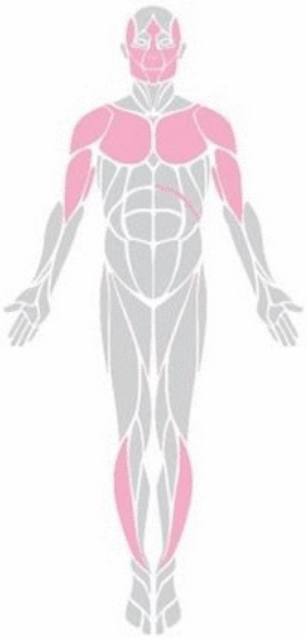

Clinical Development of Resolaris:
Harnessing a Natural Pathway
to Treat Multiple Rare Muscle Diseases

FSHD: A Severe Skeletal Muscle Disease

With dominant/spontaneous genetic toxic gain of function

Facioscapulohumeral Muscular Dystrophy (FSHD)

Pathology	▪ Dominant/spontaneous toxic gain of function (Dux4) ▪ Immune component (e.g. T cells) ▪ Muscle loss, fat infiltration
Clinical	▪ Debilitating muscle weakness ▪ Difficulty raising arms, foot drop when walking ▪ Mouth atrophy; difficulty smiling and swallowing ▪ Slow progression of disease systemically ▪ May have visual or auditory impairment
Standard of care	▪ No therapeutic treatments ▪ Only supportive care provided



Slow Muscle-by-Muscle Disease Progression

Therapeutically promoting homeostasis in FSHD Muscle throughout the body

INTERVENING EARLY

Potential areas of therapeutic intervention by Resolaris

First Physiocrine Patient Trial Data

Building a foundation for a franchise and new class of therapeutics

Significant step forward to advancing Physiocrine based therapeutics

Important advancement for hard to treat diseases (FSHD/RMICs)

- Establishing data dossier on safety
- Exploring activity assessments & optimal dose
- Directionality on endpoints for approval

Foundation to build upon with 4Q 2016 trial data

Adult FSHD 002 Design & Trial Objectives

Design

Double-blinded, 4 sites, 4 countries, n=20,
Multiple Ascending Dose, 3:1 Randomization (Resolaris:placebo)

1. Build dossier for Resolaris & class:
   - Safety
   - Tolerability
   - Immunogenicity
   - PK

✓ Completed 1st multiple dose trial
- ✓ Safety
- ✓ Tolerability*
- ✓ Immunogenicity
- ✓ PK

2. Explore FSHD pertinent readouts
   - Circulating markers of disease
   - Targeted MRI of disease muscle
   - Strength
   - Patient reported outcomes

✓ Completed 1st FSHD only trial
- ± Only 2/20 patients with elevated levels
- ± Targeted may be too narrow
- ✓ Muscle testing may hold promise
- ✓ Potential signal to confirm

3. Across 3 dose cohorts over 1 or 3 months of dosing

✓ Potential activity @ 3.0 mg/kg (weekly)

* 1 reversible Infusion Related Reaction (IRR) patient in 002 & 2 reversible IRR patients in 005 trial

Exploratory Study of Resolaris in Adult FSHD

Baseline Study Characteristics

Study Demographics

	Resolaris	Placebo
Patients	15	5
Age (years), Median	46	52
Male/Female (%)	53/47	80/20
Patients with 3 D4Z4 repeats or less	2	0
Completed Study	100%*	100%
Elevated cytokines of interest	1/15	1/5
Baseline FSHD Clinical Severity Score, Mean (SD)	3.2 (0.8)	2.7 (0.7)

Analysis based on data available through early March 2016

* One patient discontinued dosing at week 11 of the 12 weeks of treatment, but completed all study visits.

Establishing the Safety Profile of Resolaris

Most adverse events in treatment arm were mild to moderate

Generally safe and well-tolerated over the dose range/duration studied

No SAEs reported by study investigators

- One generalized infusion related reaction (IRR) reclassified by aTyr to serious adverse event

ADAs confirmed in approximately 40% of patients dosed with Resolaris

- No demonstrated effect of ADAs on pharmacokinetics of Resolaris and of low titer
- No reported antisynthetase syndrome

Procedures in effect to minimize occurrence of IRRs/ADAs moving forward

INQoL: Patient Reported Outcome

Individual Neuromuscular Quality of Life Assessment

Validated neuromuscular assessment tool*

- Global systemic assessment used in clinical studies and trials
- Not frequently used in clinical practice

Self-administered questionnaire consisting of 45 queries/4 dimensions

1. Life Domains
   - 1) Activities 2) Independence 3) Social Relationships 4) Emotions 5) Body Image
2. Symptoms, Treatment Effects
3. Overall INQoL score; derived from 5 Life Domains

Improvement = <u>decreased scores</u>

- In individual Life Domains & Overall INQoL (negative change from baseline)

FDA: "Generally, findings measured by a well-defined and reliable PRO instrument in appropriately designed investigations can be used to support a claim in medical product labeling if the claim is consistent with the instrument's documented measurement capability."**

* Vincent KA et al: Construction and Validation of a Quality of Life Questionnaire for Neuromuscular Disease (INQoL). Neurology 2007, 68:1051-1057.

** FDA Guidance for industry. Patient-Reported Outcome Measures: Use in Medical Product Development to Support Labeling Claims; 2009.

Multiple Dimensions Improve on INQoL

Improvement reflected by negative change from baseline

	INQoL Overall Scores Change from Baseline (%) ITT Population (n=20)			
Treatment Duration Group	**Placebo**	**0.3 mg/kg**	**1.0 mg/kg**	**3.0 mg/kg**
1 Month	4.12 (n=5)	2.77 (n=3)	-1.22 (n=4)	-3.78 (n=6)
3 Months	15.55 (n=2)	NA[1]	NA[1]	-9.90 (n=6)

Overall Score: five Life domains:
- Activities
- Independence
- Emotions
- Social Relationships
- Body Image

	Proportion of Patients with Improved INQoL Overall Scores			
Treatment Duration Group	**Placebo**	**0.3 mg/kg**	**1.0 mg/kg**	**3.0 mg/kg**
1 Month	2/5	1/3	2/4	4/6
3 Months	0/2	NA[1]	NA[1]	5/6

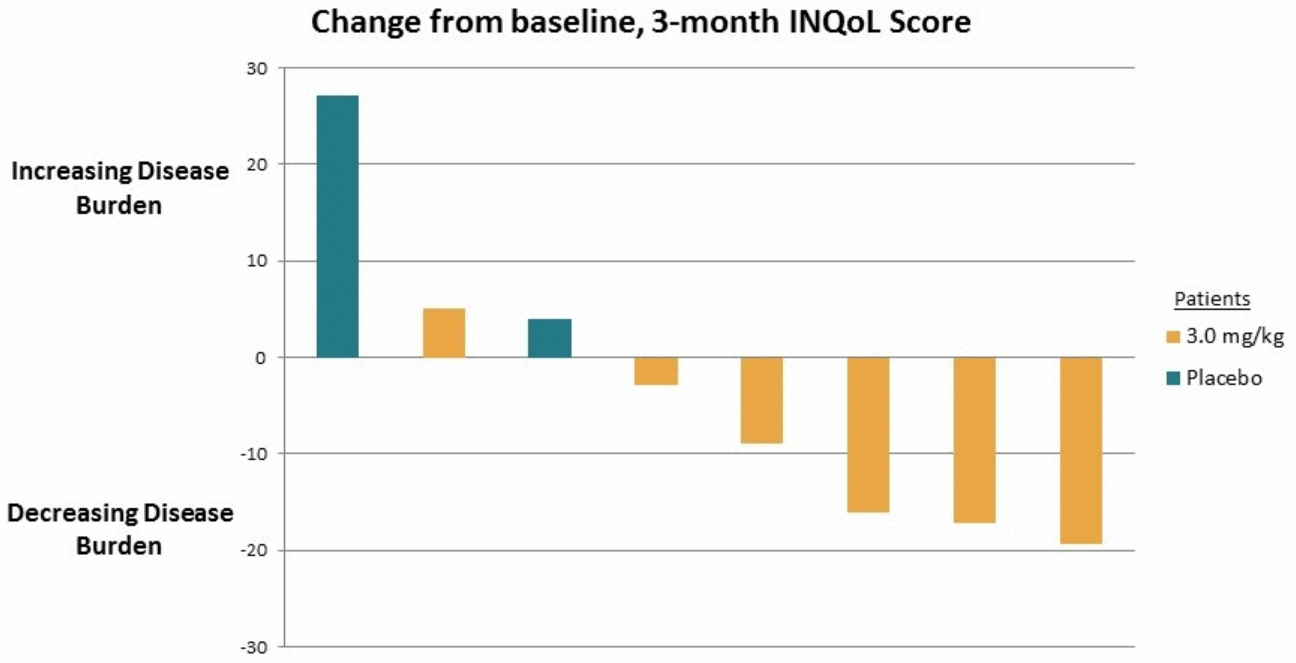
Trial not powered to show statistical significance

Data suggest potential improvement in this relatively small clinical trial of FSHD patients

1) NA is not applicable; only 1 month of dosing
2) Relative improvement placebo v. 3.0 mg/kg cohort at 3 months: 25.5% (p=0.03)

Placebo v 3.0 mg/kg Patients Overall INQoL Score

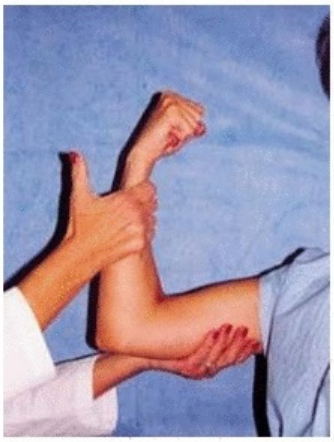
Suggestive of patient improvement in 3 months



MMT Measurement

Muscle function/strength was formally assessed by investigators using Manual Muscle Testing (MMT)

- 15 muscles evaluated at 4 time points in study
- Muscles scored individually
- Composite score calculated
- Progression: lower scores; negative change from baseline
- Improvement: higher scores; positive change from baseline



Data suggest small trends of slower progression or potential improvement

Targeted MRI & Circulating Markers

To be monitored in additional studies and extension phase

MRI used to evaluate immune components in a targeted muscle did not record a difference between placebo and 3.0 mg/kg group

- To be followed through extension study

No evidence of immune suppression was observed with exploratory circulating cytokines, as well as immune cells

Assessment of selected circulating markers did not record a difference between placebo and 3.0 mg/kg group

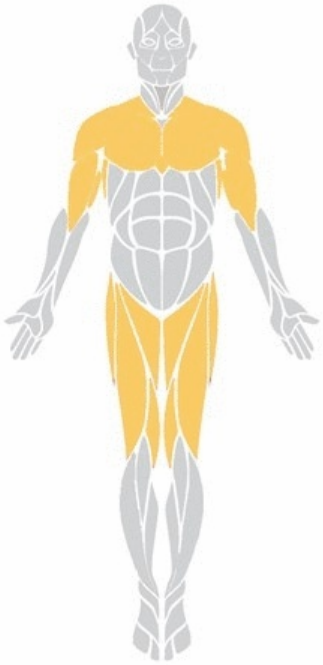
Only 2 subjects started with elevated levels of immune markers of interest

LGMD: A Severe Muscle Disease

With a genetic loss of function

Limb-girdle Muscular Dystrophy 2B (LGMD2B)

Pathology	▪ Immune component (e.g. T-cells) ▪ Toxic loss of function mutation (dysferlin) ▪ Muscle group progression
Clinical	▪ Debilitating muscle weakness ▪ Challenges moving limbs ▪ May have respiratory insufficiency
Standard of care	▪ No therapeutic treatments ▪ Only supportive care provided



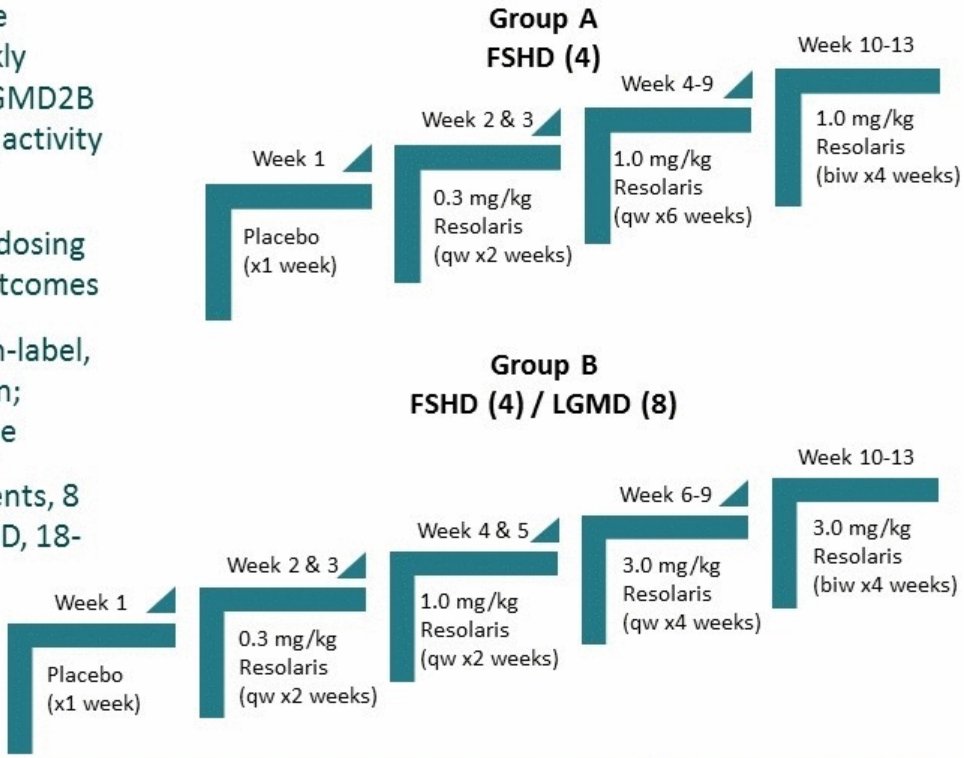
Adult LGMD2B and FSHD (Trial-004)

Purpose – 1) to evaluate the safety/tolerability of biweekly infusions in patients with LGMD2B and FSHD; 2) to assess drug activity more proximal to dosing

Rationale – More frequent dosing may demonstrate better outcomes

Design & study sites – Open-label, intra-patient dose escalation; multiple sites in US & Europe

Study population – 16 patients, 8 each with LGMD2B and FSHD, 18-75 years of age



Early Onset FSHD Case History

Early progression, devastating disease impact

PATIENT STORY

First symptoms | **Diagnosed age 8 with FSHD** | **Diagnosed with scoliosis** | **Part time wheelchair-bound** | **Full time wheelchair-bound** | **Full dependency due to severe physical disability**

Age <6	6 – 12	12 – 18	18 - 24
• Normal early childhood	• Muscle weakness and early speech impediment • Difficulty forming facial expressions • Weakness in the lower back/curvature of the spine • Leg muscle weakness/walking with a limp	• Lower limb muscle weakness/walker or chair • Development of severe speech impediment • Foot drop and loss of ability to stand/multiple falls	• Requires full-time use of wheelchair and assisted living

http://www.thequardian.com/lifeandstyle/2009/may/28/muscular-dystrophy-disability-fshd

Climbing Mountains; Sarabjit Parmar, 2014

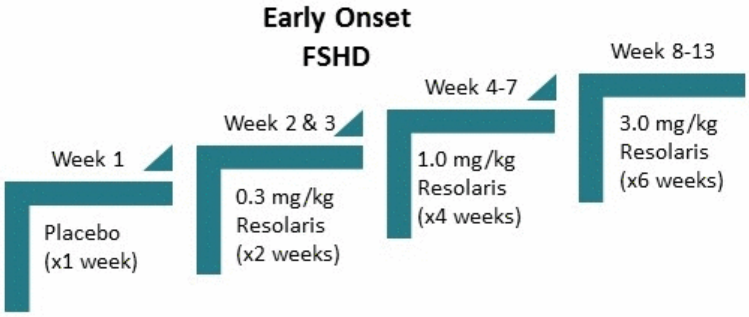
Early Onset FSHD (Trial-003)

Purpose – 1) to evaluate the safety/tolerability of weekly infusions in patients with Early Onset FSHD; 2) to assess drug activity in new patient population & with additional endpoints

Rationale – Investigate often more severe form of disease, involves additional organ systems

Design & study sites – Open-label, intra-patient dose escalation; multiple sites in US & Europe

Study population – 16 patients; Stage 1: 8 patients 16-25 years of age; Stage 2: 8 patients 12-15 years of age. Genetically confirmed diagnosis of FSHD and onset of symptoms prior to age 10.



Resolaris Trial Summary 2016

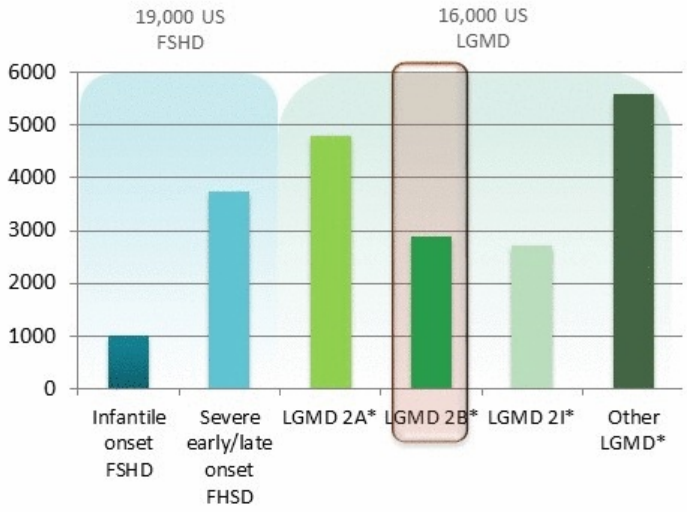
Trial	Patient Populations	N	Highest Ending Dose Weekly (mg/kg)	MRI (+) Entrance	MRI Broad Readout	MRI Targeted Readout	INQoL	MMT	Immune Markers	Readout Timing
002	Adult FSHD	20	3.0	✓	Yes	✓	✓	✓	✓	✓
003	EO FSHD	8	3.0	No	Yes	No	Yes	Yes	Yes	4Q16
004	Adult FSHD	8	3.0 (2x)	Yes	Yes	Yes	Yes	Yes	Yes	4Q16
004	Adult LGMD	8	3.0 (2x)	Serum marker or MRI	Yes	Yes*	Yes	Yes	Yes	4Q16
005	Adult FSHD (002 ext. study)	8	3.0	No	Yes	Yes**	Yes	Yes	Yes	4Q16

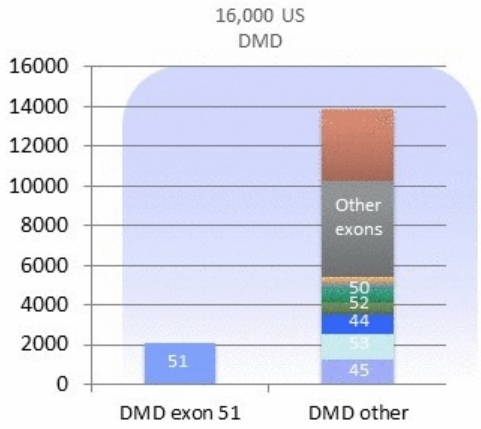
Next FSHD trial based on 4Q results of 003, 004 & 005 trials

* Targeted MRI only if qualified with Stir+ muscle at baseline.
** Only for Cohort 3 subjects

Resolaris: One Product, Multiple Rare Diseases

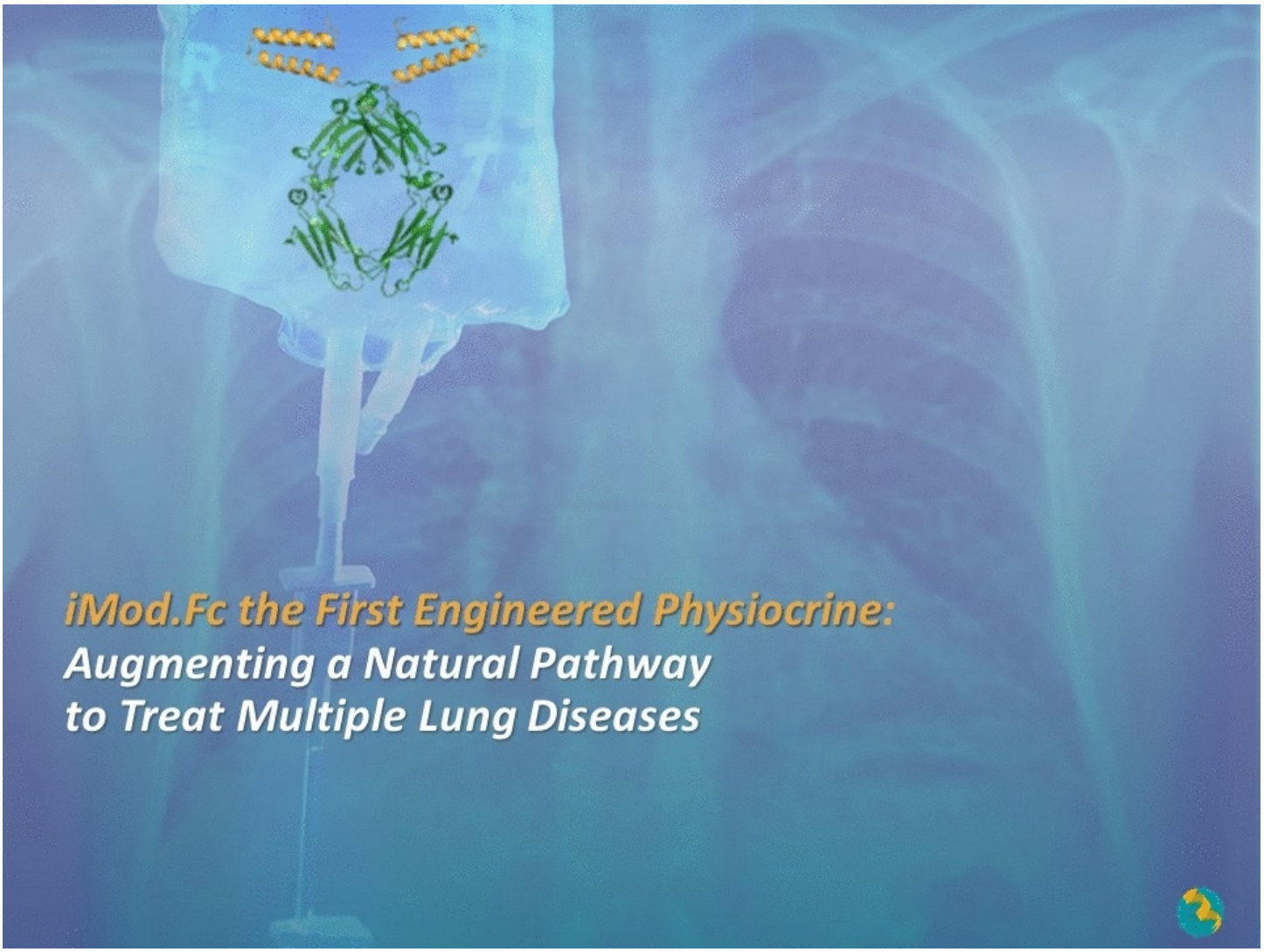
Promise for severely afflicted myopathy patients





Leadership position in FSHD clinical trials
Leverage registries, sites and advocacy
Common physician base

FSHD: Average prevalence rates of FSHD are approximately 1/17,000. Applying this rate to the US population based on recent census data equals approximately 19,000.
LGMD: 16,000 cases estimated in US population. 1/20,000 Wickland and Kissel, Neural. Clin. 2014. Relative Prevalence of Limb Girdle Muscular Dystrophies in the United States Population. Wicklund et al., Neurology 2013.
DMD: Prevalence of approximately 5/100,000. Orphanet Report Series - Prevalence of rare diseases: Bibliographic data - May 2014 - Number 1


iMod.Fc the First Engineered Physiocrine:
Augmenting a Natural Pathway
to Treat Multiple Lung Diseases

An Engineered Physiocrine for Lung Disease: iMod.Fc

New TPP to open more lung indications

Rationale for iMod.Fc*:

- Resolaris TPP: Weekly dosing; limits lung applications
- Develop molecule for new TPP: potentially once-monthly dosing

Product Concept:

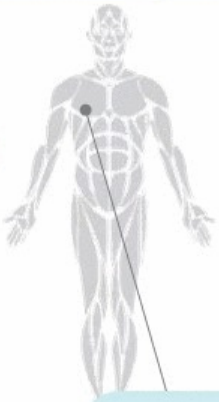
- Two iMod domains per Fc of an antibody
- Extend exposure to hit TPP

Preclinical Path and Goals:

- Industry proven model of IPF (approved drugs: Pirfenidone & Nintedanib)
- *E. coli* produced for low COGs
- Show immuno- & fibro- modulatory activity
- Show safety at higher doses

Potential Therapeutic applications:

- Rare pulmonopathies with an immune component (RPICs)
- Broader reach into RPICs and interstitial lung disease (ILD) indications



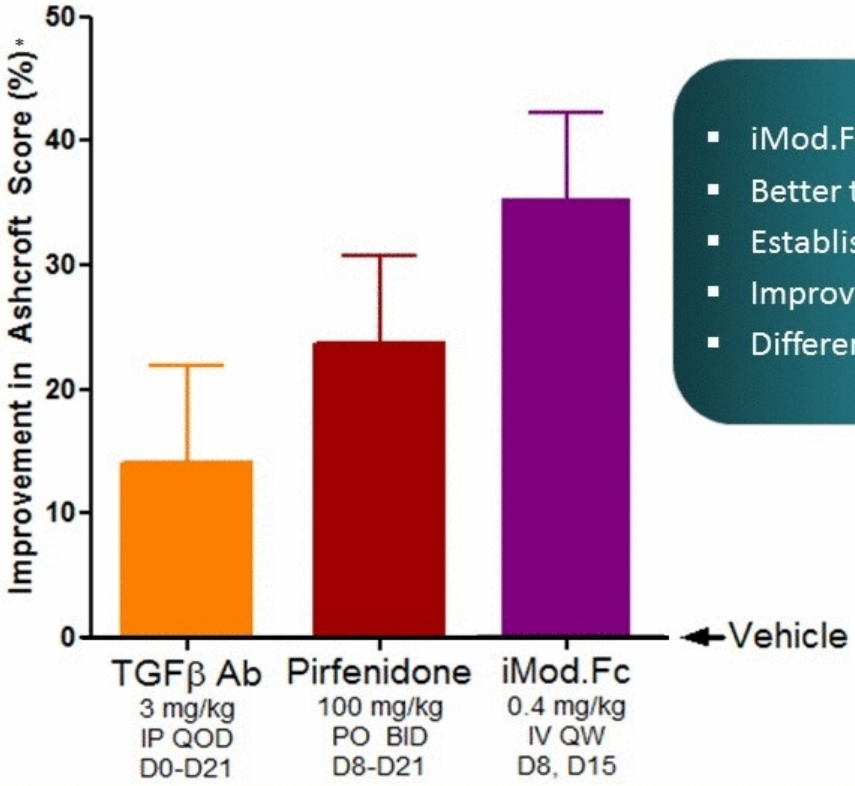
Rare Pulmonopathies with an Immune Component ("RPICs")

Lung

** iMod.Fc refers to immunomodulatory domain of HARS fused to an Fc region of an antibody*

TPP = Target Product Profile

Two iMod.Fc Doses Outperform 28 Pirfenidone Doses



- iMod.Fc 1/250th of Pirfenidone dose
- Better than 10 TGFβ Ab doses
- Established IPF rodent model
- Improves inflammation & fibrosis
- Differentiated mechanism

*The Ashcroft scale for the evaluation of bleomycin-induced lung fibrosis is the analysis of stained histological samples by visual assessment

Non-Human Primate and Rodent PK and Safety

Non-Human Primates

Non-GLP double dose toxicology

- 1-month study at dose level 25x efficacious dose
- No pro-inflammatory cytokine signal
- No clinical observations
- No changes in body or tissue weights

Attractive PK

- >1nM for at least 500 hours at 1mg/kg

Rodents

Non-GLP toxicology

- 1-month study at dose level 25x efficacious dose
- No pro-inflammatory cytokine signal
- No clinical observations
- No changes in body or tissue weights

Attractive PK

Supports potential for monthly dosing in patients

iMod.Fc for Multiple Lung Indications

Severe, rare disorders with high unmet medical need

> 80 RPIC Forms
Including Interstitial Lung Diseases

Pathogenesis	▪ Lung damage leading to alveolar inflammation or fibrosis ▪ Worst prognosis: lower DLCO and rapid decline of DLCO over three years
Clinical manifestations	▪ Shortness of breath and cough ▪ Specific chest radiographic abnormalities ▪ Decreased lung volume noticed in pulmonary function tests
Standard of care	▪ O_2, pulmonary rehabilitation; lung transplant ▪ Immunosuppressive (cyclophosphamide with low dose prednisone) ▪ For IPF, Pirfenidone & Nintedanib
Upcoming Trials	▪ **Expect to initiate clinical trial with iMod.Fc in 2017** ▪ Evaluating appropriate forms of RPICs, including ILD ▪ Goal is to explore safety, tolerability, biological and clinical activity


Building a New Class of Therapeutics:
Foundation for the Future

Strong Cash Position and Focused Execution

Balance sheet well-aligned to achieve near-term catalysts

Milestones
2016/2017

Early Onset FSHD 003 Data
(4Q16)

Adult LGMD/Adult FSHD 004 Data
(4Q16)

Adult FSHD Long Term Extension 005 Data
(4Q16)

Initiate iMod.Fc Clinical Trials
(2017)

Financials

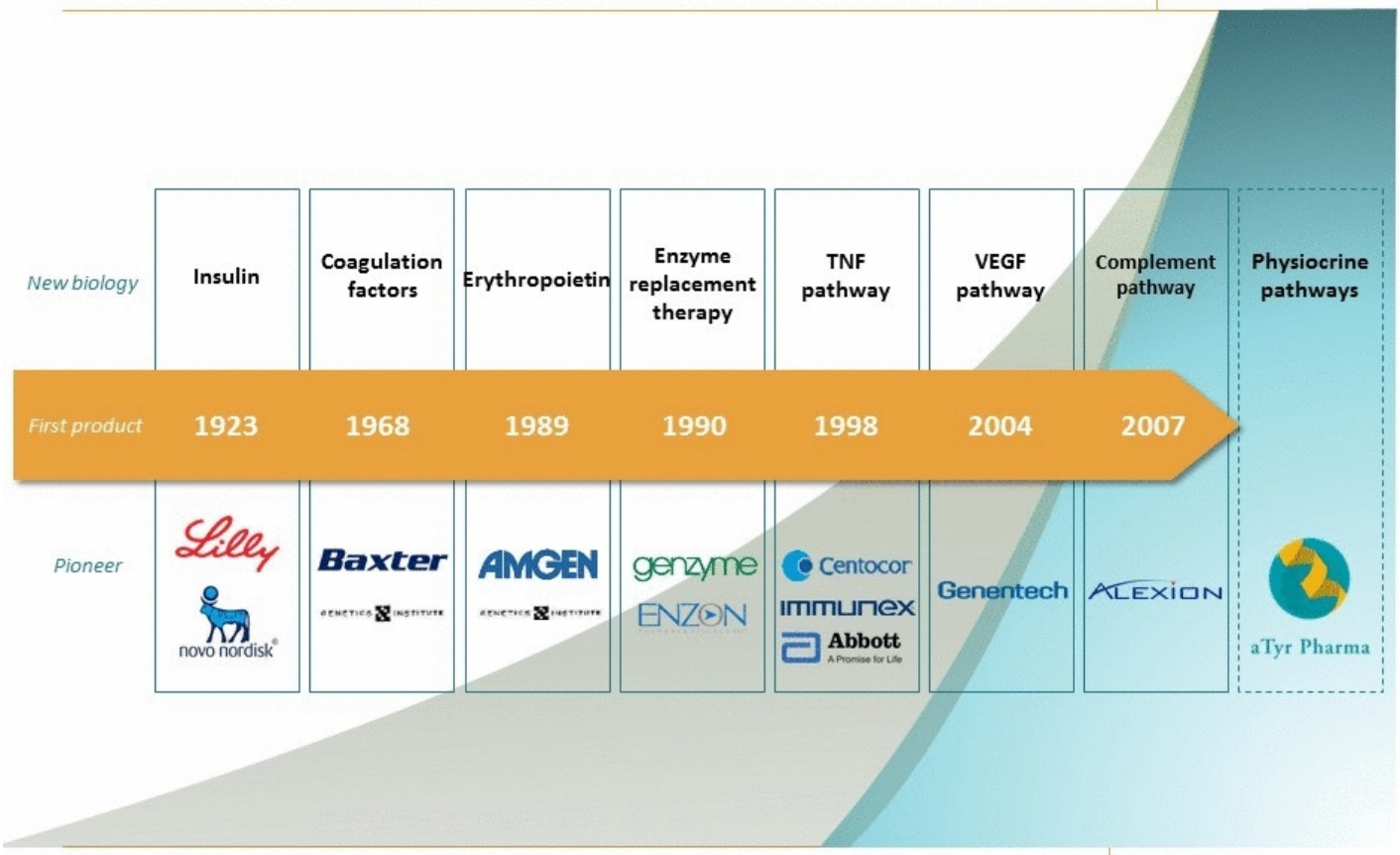
Cash as of 12/31/15:
$125.3M

Shares Outstanding:
23.7M

Revolutionary Drugs Leveraging New Biology

Opportunity to own a new class of meaningful medicines

MEANINGFUL MEDICINES

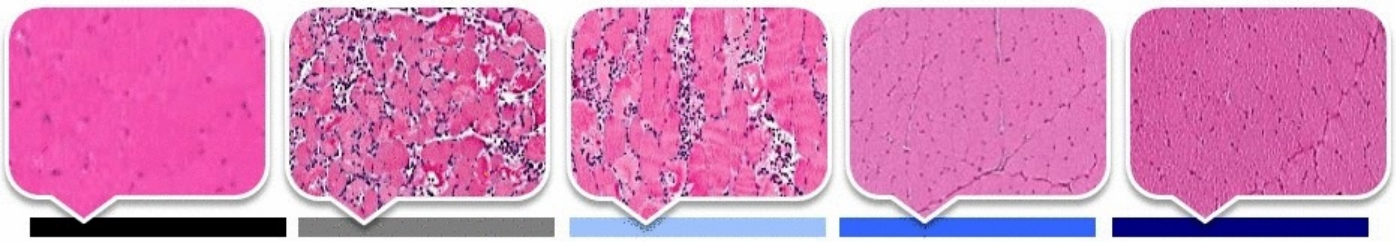



Appendix

Ability to Treat Immune Cell Invasion in Muscle

Myopathy model: in vivo Resolaris effects

RESOLARIS
PRECLINICAL



Control	Statin days 1-14 (toxic dose)	0.3 mg/kg Resolaris days 7-14 Statin days 1-14	1.0 mg/kg Resolaris days 7-14 Statin days 1-14	3.0 mg/kg Resolaris days 7-14 Statin days 1-14

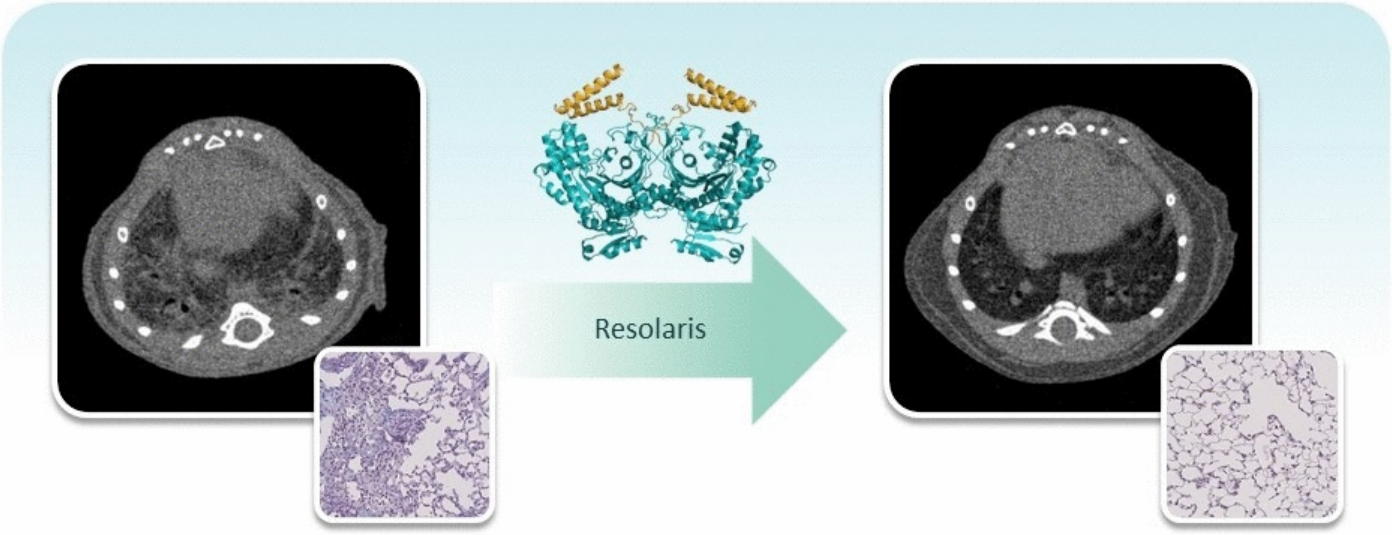
↓ Cytokines, ↓ T-cells and ↓ Monocytes with Resolaris administration

aTyr unpublished data

Resolaris: Active In Lung Inflammation & Fibrosis Model

Three week rodent model, two weeks of therapeutic treatment

PROMISING THERAPEUTIC ACTIVITY



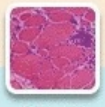
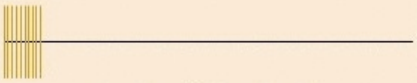
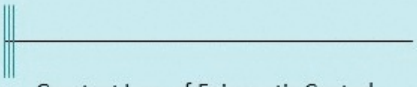
Pulmonary Inflammation and Fibrosis Induced with Bleomycin

Promising therapeutic activity*

Compared favorably to Pirfenidone

Experimental data provided by Stelic CRO
CT scans taken at day 14, lung histology taken at day 21
** Activity of mouse Resolaris (3mg/kg) vs vehicle control*

FSHD Molecular Pathology Links Loss of Epigenetic Control to Immune Status with Disease

FSHD Muscle Phenotype	4th Chromosome Terminal Repeats DUX 4	Non-Germline Gene Expression	Skeletal Muscle Result	Immune Cell Invasion	Disease Status
 Normal	 Full Epigenetic Control ~100 repeats	Silent	Normal	No	Normal
FSHD 	 Partial Epigenetic Control	Activatible	↑DUX 4 ↑"Non-muscle" proteins	Yes	Moderate to Severe
Most Severe Typically	 Greatest Loss of Epigenetic Control	Highly Activatible	↑DUX 4 ↑"Non-muscle" proteins	Yes	Severe

Statland, J., C. M. Donlin-Smith, et al. Journal of Neuromuscular Diseases, 2014. Lemmers, E. et al, Gene Reviews 2014

| = D4Z4 Repeat (containing DUX4)