

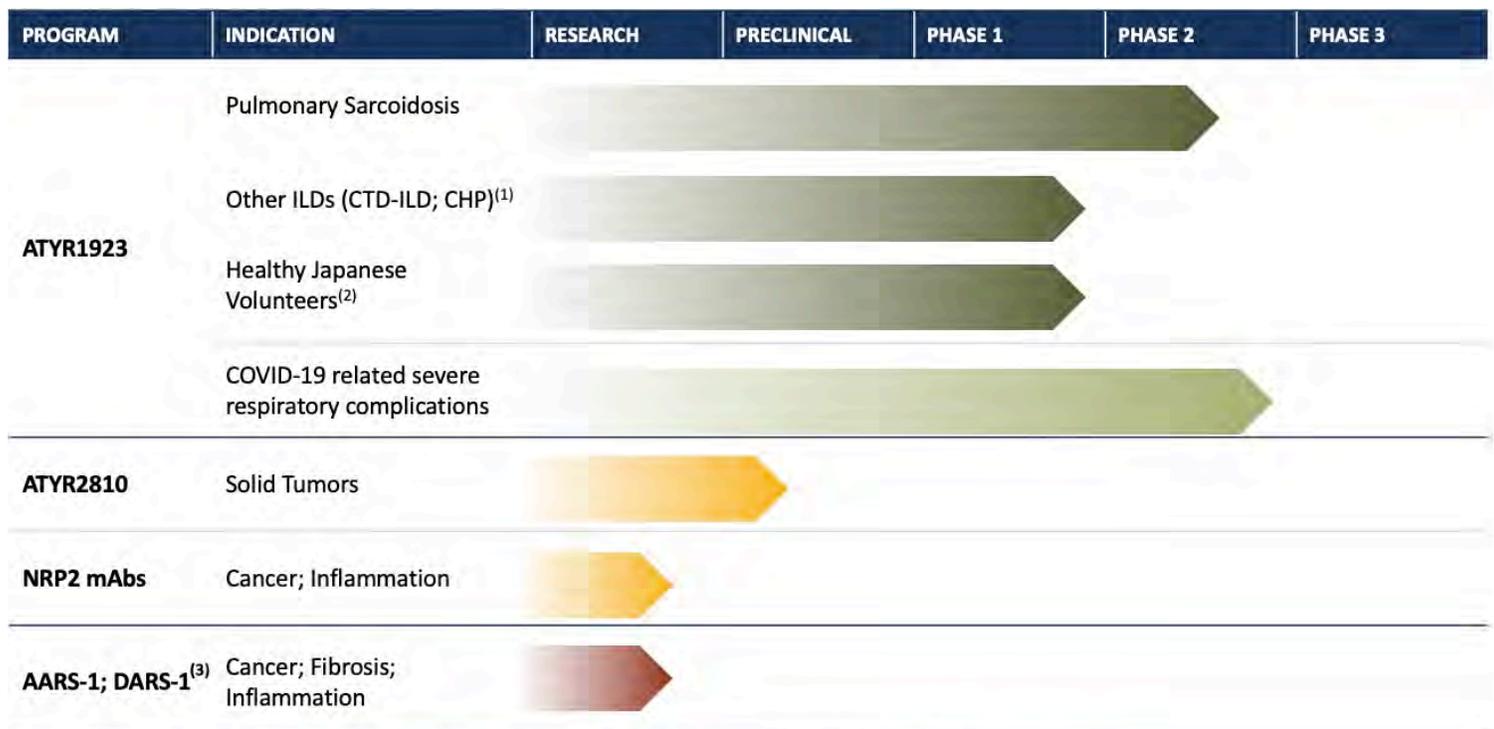
INVESTMENT HIGHLIGHTS

- Mission: develop a new class of medicine based on proprietary biology
- Lead product candidate, ATYR1923, is a potential first-in-class immunomodulator for the treatment of severe inflammatory lung disease
 - Phase 1b/2a trial of ATYR1923 in pulmonary sarcoidosis, a major form of interstitial lung disease (ILD)
 - Phase 2 trial of ATYR1923 in COVID-19 patients with severe respiratory complications
 - Phase 1 trial of ATYR1923 in healthy volunteers in Japan
 - Collaboration with Kyorin Pharmaceutical for ILDs in Japan with total deal value of up to \$175m
- Lead IND candidate in oncology, ATYR2810, is a monoclonal antibody for the potential treatment of certain aggressive tumors where NRP2 is implicated
- Discovery pipeline focused on NRP2 antibodies for cancer and inflammation and new tRNA synthetase candidates including selected fragments of AARS and DARS for cancer, fibrosis and inflammation with an initial focus on natural killer (NK) cell biology

Ticker	LIFE (NASDAQ)
Cash ¹	\$31.7 million*
Common Shares ²	16,011,385
Headquarters	San Diego
Year-end	December 31 st
¹ As of December 31, 2020	
² As of March 19, 2021	
*Does not include \$27.2 million raised subsequent to 12/31/20 from milestone payments and equity financings	

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PIPELINE



(1) CTD-ILD: connective tissue disease-related ILD (e.g. Scleroderma-related ILD); CHP: chronic hypersensitivity pneumonitis

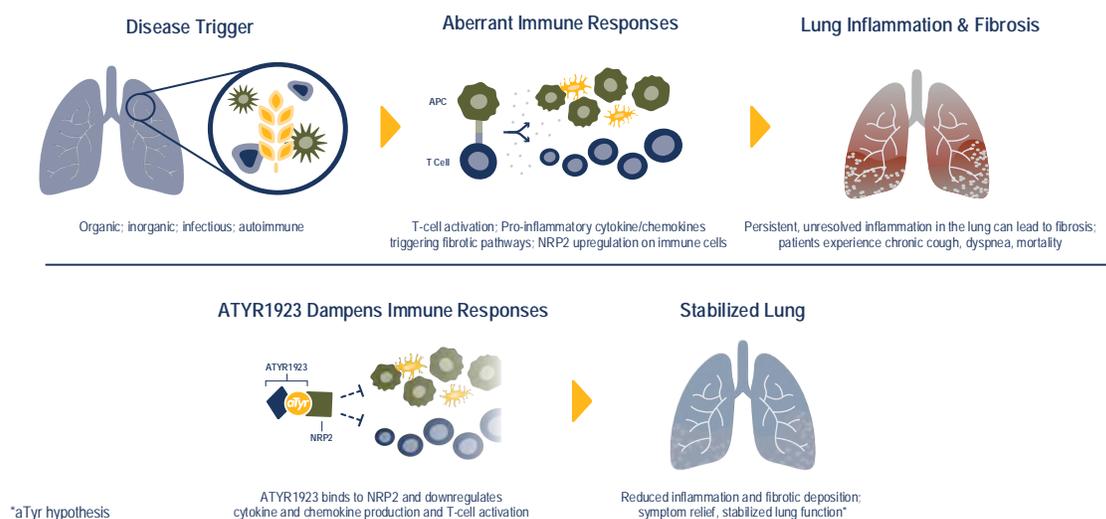
(2) In partnership with Kyorin Pharmaceutical Co., Ltd.

(3) The next two candidates from our tRNA synthetase platform; initial focus on NK cell biology.

ATYR1923: POTENTIAL FIRST-IN-CLASS CANDIDATE FOR INFLAMMATORY LUNG DISEASE

- Downregulates inflammatory and pro-fibrotic cytokines and chemokines via NRP2 receptor
- Demonstrated anti-inflammatory and anti-fibrotic effect in multiple animal models of ILD
- Demonstrated anti-inflammatory effects in COVID-19 patients, consistent with animal models
- Completed Phase 1 study in 36 healthy volunteers, generally well-tolerated with PK supporting once-monthly dosing; safety profile consistent in interim analysis from Phase 1b/2a study in pulmonary sarcoidosis patients and completed Phase 2 study in COVID-19 patients
- Completed Phase 2 study in 32 hospitalized COVID-19 patients with severe respiratory complications; study met primary safety endpoint and demonstrated a signal of activity in clinical improvement in the 3.0mg/kg cohort and trends in overall improvement in key inflammatory biomarkers analyzed compared to placebo
- Completed enrollment in Phase 1b/2a study in 36 patients with pulmonary sarcoidosis dosed at levels of 1.0 mg/kg, 3.0 mg/kg, and 5.0 mg/kg ATYR1923 or placebo dosed every month for six months; data expected in third quarter 2021
- Completed last subject visit in Phase 1 study to evaluate the safety, pharmacokinetics and immunogenicity of ATYR1923 in 32 healthy Japanese volunteers being conducted by Kyorin

ATYR1923 MOA IN INFLAMMATORY LUNG DISEASE



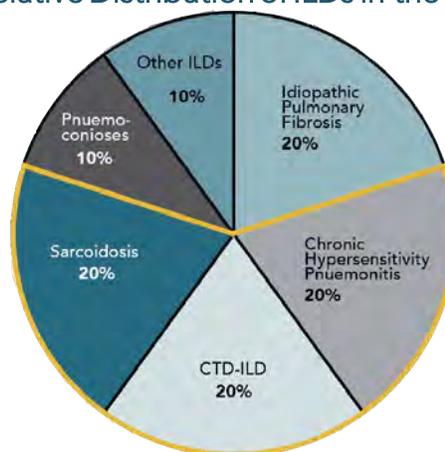
FIRST INDICATION: PULMONARY SARCOIDOSIS

- Inflammatory disease of unknown etiology characterized by the formulation of granulomas (clumps of immune cells), primarily T-cell driven
- Pulmonary sarcoidosis and occurs in ~90% of patients
- Treatment options are limited with associated toxicity: Corticosteroids, cytotoxic immunosuppressants, TNF inhibitors

MARKET OPPORTUNITY IN ILD

- >200 types of ILD; 4 major types comprise 80% of patients
- Limited standard of care with substantial morbidity and mortality
- aTyr focused on 3 most inflammatory types: 500-600k U.S. patients⁽²⁾; ~3m globally
- \$2-3b global market opportunity⁽³⁾

Relative Distribution of ILDs in the U.S. ⁽¹⁾



⁽¹⁾ Lederer, Martinez. NEJM2018

⁽²⁾ All ILDs individually have potential for orphan status

⁽³⁾ aTyr estimates for ATYR1923 in Pulmonary Sarcoidosis, CHP, CTD-ILD; excludes IPF