INVESTMENT HIGHLIGHTS

MISSION: to translate discoveries from its tRNA synthetase platform into new therapeutics for fibrosis, inflammation and cancer.

- Lead product candidate, efzofitimod (ATYR1923), is a potential first-in-class immunomodulator for the treatment of fibrotic lung disease.
  - EFZO-FIT™, a Phase 3 global pivotal study of efzofitimod in pulmonary sarcoidosis, a major form of interstitial lung disease (ILD), expected to begin in Q3 2022
  - Phase 2 ready in other ILD, including CTD-ILD and CHP
  - Orphan drug designation for sarcoidosis and systemic sclerosis (scleroderma)
  - Fast Track designation for pulmonary sarcoidosis
  - 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 Neuropilin-2 (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

Ticker	LIFE (NASDAQ)
Cash[1]	$89.3 million
Common Shares[1]	28,127,458
Headquarters	San Diego, CA
Year-end	December 31st

[1] As of June 30, 2022

For more information contact:
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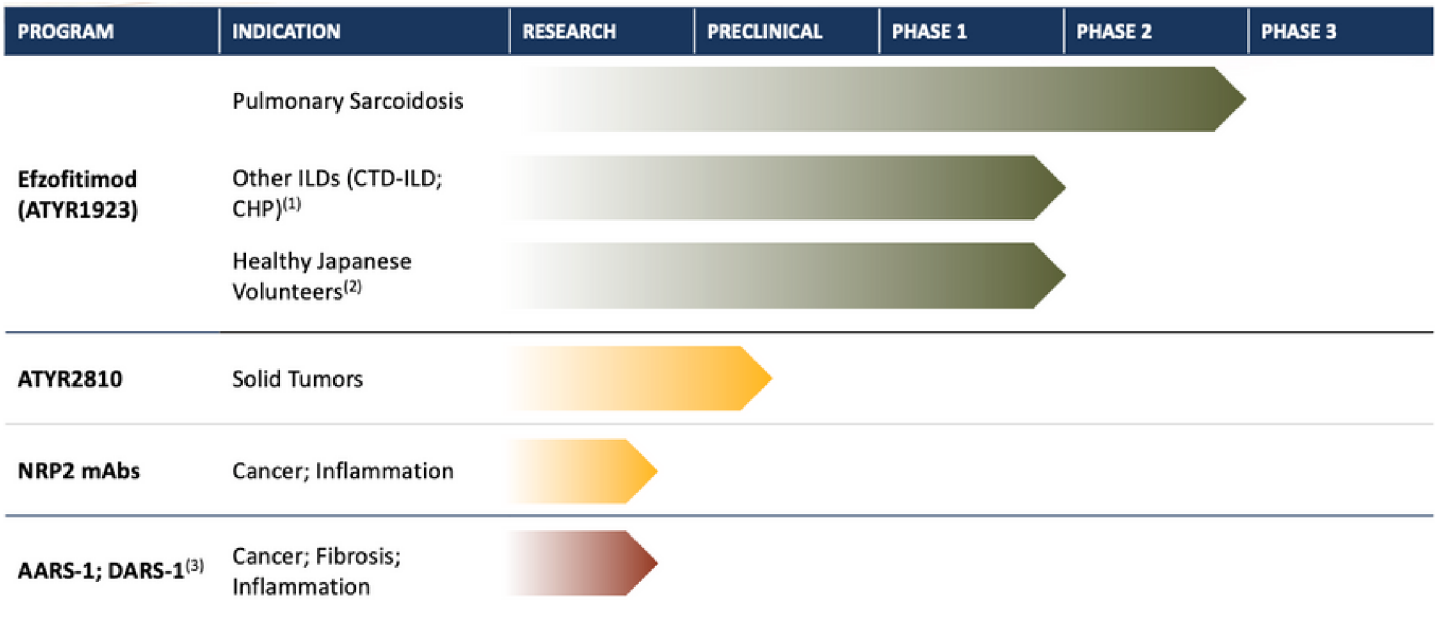
PIPELINE



(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. Kyorin's Phase 1 study in healthy Japanese volunteers has been completed. Kyorin is eligible to participate in future efzofitimod trials sponsored by aTyr.
(3) The next two candidates from our tRNA synthetase platform; initial focus on NK cell biology

EFZOFITIMOD: POTENTIAL FIRST-IN-CLASS IMMUNOMODULATOR FOR FIBROTIC LUNG DISEASE

CLINICAL EXPERIENCE

- Safe and well-tolerated and no immunogenicity observed in clinical trials to date with exposure to 24 weeks
- Controls inflammation by downregulating cytokines implicated in sarcoidosis and other ILD
- Dose-dependent disease control demonstrated in pulmonary sarcoidosis patients

PRE-CLINICAL EVIDENCE

- Anti-inflammatory and anti-fibrotic effects demonstrated in translational models of multiple ILDs
- Reduces inflammatory cytokines and pro-fibrotic chemokines *in vitro* and *in vivo*

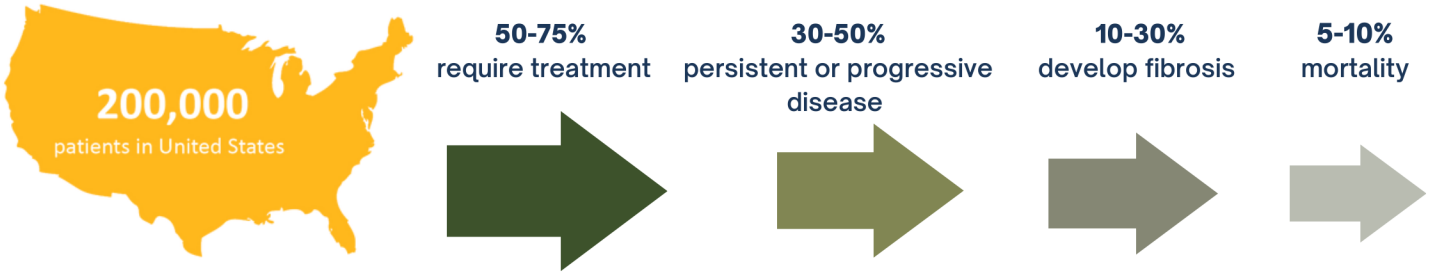
MECHANISM OF ACTION

- Targets innate and adaptive immune cells during active inflammation to restore immune balance via selective modulation of NRP2

FIRST INDICATION: PULMONARY SARCOIDOSIS

- Inflammatory disease of unknown etiology characterized by the formulation of granulomas (clumps of immune cells), primarily T-cell driven
- Lungs are affected in >90% of sarcoidosis patients
- Treatment options are limited with associated toxicity and include corticosteroids, cytotoxic immunosuppressants and TNF inhibitors, with limited development pipline

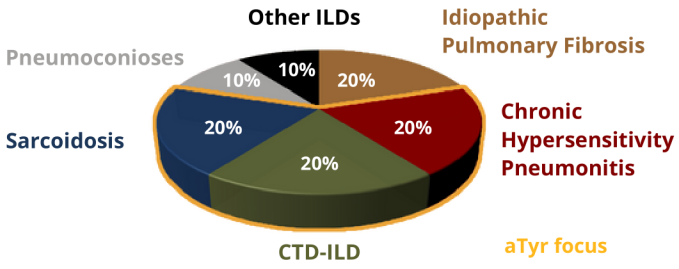
Large orphan population



ILD: A GROUP OF IMMUNE-MEDIATED FIBROTIC LUNG DISEASES WITH $2-3B GLOBAL MARKET OPPORTUNITY[1]

- >200 types of ILD; 4 major types comprise 80% of patients
- Fibrosis occurs in all types, with immune pathology common to all
- Limited standard of care with substantial morbidity and mortality
- aTyr focused on the 3 main immune-driven types: >500-600k U.S. patients[2]; ~3m globally

RELATIVE DISTRIBUTION OF ILDs IN THE U.S. [3]



[1] aTyr estimates for efzofitimod in Pulmonary Sarcoidosis, CHP, CTD-ILD; excludes IPF
[2] All ILDs individually have potential for orphan status
[3] Lederer, Martinez. NEJM 2018