

## Executive Summary

**Company:** AfaSci, Inc., is a privately held biopharmaceutical company with a mission to discover and develop transformative medicines for neurological disorders with a focus on pain, epilepsy, and essential tremor. We are developing novel non-opioid, non-NSAID orally available analgesics for treatment of chronic neuropathic and inflammatory pain, and central nervous system (CNS) disorders.

**Platform Technology:** AfaSci has conducted its core drug discovery activities in-house, including chemical design, electrophysiology, and *in vivo* pharmacology using established animal disease models and tests. We are focusing on two main clinically validated drug targets: 1. T-type Cav3 channels (Cav3), which are overactivated in chronic pain and a rare type of epilepsy, and 2. sEH, an enzyme involved in inflammation. We have conducted lead optimization to fine-tune the Cav3 vs sEH inhibition in each drug candidate to tailor their effects to restoring CNS functions and anti-inflammation in different disorders. Three lead preclinical drug candidates include:

- **AFA-281** dual-modulates Cav3 and sEH to treat chronic neuropathic and inflammatory pain. IND-enabling studies on AFA-281 are ongoing. IND application and clinical Phase I trials are planned for mid 2022.
- **AFA-279** mainly modulates Cav3 to treat a rare type of epilepsy and essential tremor. IND-enabling studies are planned for early 2022.
- **AFA-280** inhibits sEH to treat inflammatory pain and neuroinflammation; IND studies are planned for mid-2022.

**Intellectual Property:** AfaSci has a strong IP position and our granted patents have long patent life.

Type	Status	Geography	Patent title	Assignment
Composition of matter	Granted in 2020 and 2021	US, China, Japan, South Korea, Russia, Mexico, Singapore	Ion channel inhibitory compounds, pharmaceutical formulations and uses	AfaSci
	PCT pending	Europe and 8 other countries		
Composition of matter	Granted in 2019	US	Compositions and method for treating acute and chronic pain by localized antagonism of CGRP receptors, or combination with sodium channel inhibition or with anti-inflammatory agent	AfaSci
Method of treatment	Granted in 2017	US	Tricyclic pyrone compounds reduce amyloid beta aggregates	AfaSci, KSU, UC Davis

## Market Opportunity

- The global pain management drug market was valued at \$71B in 2019 and is projected to reach \$92B by 2027 with a compound annual growth rate (CAGR) of 3.8% from 2020 to 2027 ([Allied Market Research](#)).
- The global antiepileptic drug market was \$16.6B in 2018 and is projected to reach \$20.3B by 2026 with a CAGR of 2.4% ([Fortune Business Insights](#)).
- There are 7 million patients with essential tremor in the US. Effective treatment is lacking. Although the market size was \$160M in 2020, it is projected to reach \$216M by 2025 with a CAGR of 5.3% ([Orion Market Reports](#)). Making a new, effective, and safe drug for essential tremor available could grow this market significantly.

**Use of Proceeds:** AfaSci seeks \$30M in Series A financing, in parallel to exploring opportunities for licensing and partnering with pharmaceuticals to advance our three preclinical drug candidates into clinical Phase I trials and proof of concept studies. The initial goal is to investigate each molecule's safety. The secondary goal is to demonstrate efficacy in chronic pain. Our exploratory programs extend to other indications such as irritable bowel syndrome, hypersensitive cough, and persistent itching, for which we have proof of concept in animal disease models.

## Management

- Simon Xie, M.D. Ph.D., AfaSci's Founder and Chief Scientific Officer. He previously led mechanistic studies on novel antiepileptics and analgesics (e.g., lamotrigine), and ion channel drug discovery at GlaxoWellcome (GSK).
- Chih-Ping (CP) Liu, Ph.D. Member of the Board of Directors. He co-founded Bolt biotherapeutics and 4 others.
- Scientific and Medical Advisors include C. Sang, MD (Brigham and Women's Hospital), D. Yeomans, PhD, S. Shafer, MD, and M Angst, MD (Stanford University School of Medicine), and C. Bountra, PhD (Oxford University).

**Exit Strategy:** Our exit strategy is flexible. We will consider all options including Initial Public Offering, Special Purpose Acquisition Company, or Merger and Acquisition.