

Symbol: PXRB

COMPANY SNAPSHOT- Morphine Replacement That's Non-Addictive

- PixarBio PLGA microparticle and nanoparticle, local drug delivery systems to treat pain, spinal cord injury, epilepsy, and Parkinson's
- Co-founded by Frank Reynolds, MIT's Dr. Robert S. Langer
- FDA 505(b)(2) PIND Meeting Sept 2015 established clean path to anticipated approval in late 2018 vs. Bupivacaine
- 14 Day Post-op Pain Treatment Est. FDA Approval in late 2018
- 7 Day Pain Treatment in 2019 and 3 Day in 2020
- No FDA Approved Competitor Lasts Longer than 4 Days
- cGMP Optimization 2017; Clinical studies 2017-2018
- Carbamazepine- FDA approved in the 1960's
- PLGA- FDA approved biomaterials approved in the 1960s

POST-OPERATIVE PAIN MARKET OPPORTUNITY

Top 15 Surgical Procedures

Total Targeted Procedures - based on survey results (top 15 surveyed procedures only)	16,961,468/year
Price Per Unit sold	\$316.50 /procedure
Non-Opioid, Non-Addictive Post-Surgical Pain Treatment Opportunity	\$5.368 Billion/year

R&D PRODUCT PLATFORM



Post-Op Pain Clinical Studies

- Large Nerve- Nerve Block
- Small Nerve- Nerve Block
- Soft tissue infiltration

Spinal Cord Injury (SCI)

- NeuroRelease-SCI for acute SCI
- Injectable NeuroScaffold for acute and chronic SCI

Epilepsy

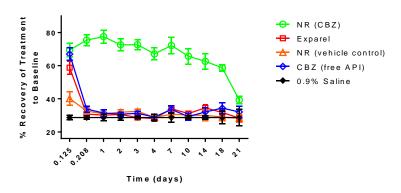
- Local delivery of anti-epileptic drugs
- Delivered up to 2 years



PROOF OF CONCEPT - True Biomaterial Platform - 3 days to 2 years of release

Controlled Release of Drugs for Pain and Epilepsy: PixarBio labs 2014

Criscione JM, Chen X, Reynolds FM, Werth N, Armstrong P, and Robert Langer, ScD





INTELLECTUAL PROPERTY

"Picket Fence" Provisional Patent Application Filed in 2014 – patent expiration begins in 2034

- Claims cover: Composition, fabrication methods, drug selection, drug payload, drug release rate, efficacy duration, and methods of use in pain indications
- Nonprovisional US and Patent Cooperation Treaty (PCT) applications filed in 2015
- Additional provisional patent applications filed in 2016 to expand pain portfolio

FORECASTED ACUTE PAIN PIPELINE

Large Nerve Knee - Femoral Nerve Block (NR-14 day) Large Nerve Knee - Femoral Nerve Block (NR-14 day) Large Nerve Knee - Femoral Nerve Block (NR-14 day) Large Nerve Knee - Femoral Nerve Block (NR-7 day) Small Nerve Shoulder - Brachial Plesus Block (NR-14 day) Small Nerve Shoulder - Brachial Plesus Block (NR-14 day) Small Nerve Shoulder - Brachial Plesus Block (NR-7 day) Small Nerve Shoulder - Brachial Plesus Block (NR-7 day) Preclinical/IND Clinical NDA Approved/Marketed Preclinical/IND Clinical NDA Approved/Marketed "Sprinkle-On" Nerve Block Soft Ussue - Infiltration (NR-3 day)

FORECASTED CHRONIC PAIN PIPLINE



Clinical Advisory Board: Nationally Recognized Ortho Surgeons & Anesthesiologists

- Hoag Orthopedic Institute, Newport, CA: James Caillouette, MD
- Mayo Clinic: Mark Pagnano, MD
- Hospital for Special Surgery, NYC: Douglas Padgett, MD
- Rush Chicago: Scott Sporer, MDOrtho Carolina: Bryan Springer, MD
- Andrews Institute: Gregory Hickman, MD & Brandon Winchester,
- MD
- Mayo Clinic: Kris Alden, MD

- University of Indiana: Michael Meneghini, MD
- Carolina Medical Center: John Camp, MD
- Florida Hospital: Moeed Azam, MD
- Trauma Orthopedic Surgeon, Chula Vista & San Diego: Anthony Sanzone, MD
- Medical City Dallas Hospital: James Mueller, MD
- St. Barnabas Hospital, Bronx, NY: Ajay Suman

LEADERSHIP TEAM

Frank Reynolds, CEO

- Founded InVivo Therapeutics Corp (NVIV) in 2005: Chairman of Board, CEO and CFO until Aug 2013. Took NVIV public in 2010. \$520mm Mkt Cap. Co-inventor on 50+ Biomaterials patents
- American Spinal Injury Association's Lifetime Achievement Award 2014
- Invented the NeuroScaffold and cured paralysis in humans

Jason Criscione, PhD, Chief Technology Officer

- Yale PhD in Biomedical Engineering.
- Expert in biomaterials design and fabrication
- Expert in polymeric particles and gels, immunotherapy
- Co-inventor of PixarBio's Drug Delivery System

Robert S. Langer

- David H. Koch Institute Professor at MIT
- 2,200+ articles, 850+ issued and pending patents worldwide
- Served as a member of the FDA's Science Board 1995-2002 and as its Chairman from 1999-2002
- Over 60 Products have made it to the clinic

David Kaplan, Chief Commercial Officer

- Rolled our Exparel, 20 years of experience designing and running nationally recognized hospital-based sales teams
- History Launching first-in-class therapies to market while with Corixa, PDL Biopharma and Pacira
- Former VP of Sales at Pacira Pharmaceuticals