

Stimulating Red Blood Cell Production to Treat Anemia

- Oral product opportunity in large-injection drug-anemia market with ongoing backup program
- Well-differentiated against recombinant and peptide-based EPO products based on ease of administration, convenient room storage, price and more physiologic mechanism of action
- Safety and efficacy suggested by a range of pre-clinical models
- Expect near-term demonstration of clinical proof of concept in early-phase studies
- Precedents have been set for clinical trial and regulatory strategy
- Market attractiveness and Partnering with Phase 1 data (Fibrogen/Astellas and Affymax/Takeda)
- Limited competition
- Experienced management team and advisors with unique domain expertise, strong commercial focus and track record of partnering clinical stage sets
- Efficient use of capital – proof of concept can be achieved in normal volunteers

Company Overview

Palkion is a Series A Drug Development Company developing oral drugs that boost the body's natural production of erythropoietin to treat anemia and other clinical indications. The company's novel compounds are HIF-prolyl hydroxylase (HIF-PH) inhibitors, which lead to red blood cell production for the treatment of anemia as a first clinical indication. Founded in 2008 by ProQuest Investments with technology licensed from Crystal Genomics, Inc., Palkion owns a portfolio of small molecule agents based on X-ray crystallographic medicinal chemistry using Crystal Genomics' proprietary platform technology. Palkion's lead agent, PN-3602, is designed to offer anemia patients a new effective, convenient and economic treatment option.

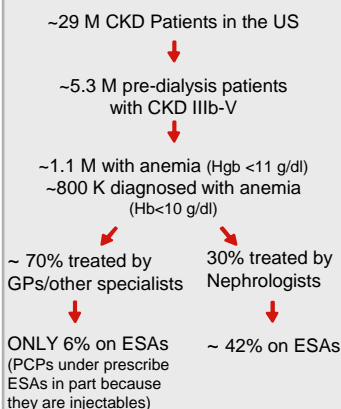
Opportunity

More than one million people in the United States are diagnosed with anemia associated with chronic kidney disease (CKD); anemia increases morbidity and mortality of these patients, reduces their quality of life and is associated with costs related to hospitalizations and lost productivity. The majority of these patients, who do not yet require dialysis to address renal dysfunction, are under the care of primary care providers (PCP) such as cardiologists, endocrinologists/diabetologists and nephrologists. Literature and survey data suggest that anemia among CKD patients is under-diagnosed. Current treatment of anemia to a target hemoglobin (Hb) between 10-12 g/dl is recommended and reimbursed; it involves regular injections with erythropoiesis stimulating agents (ESAs). The global market for ESAs totals about \$10 bn; in the United States alone, \$1.3 bn are spent each year for the treatment of renal anemia in pre-dialysis CKD patients. Yet about 75% of the diagnosed patients remain untreated. Costs of administration for the PCP including keeping a refrigerated inventory, training staff to administer injectable drugs, patient inconvenience associated with frequent injections to be given in the doctor's office, hypersensitivity reactions and an unfavorable side effect profile including ESA-induced hypertension are likely to play a role in the underuse of an otherwise effective treatment.

Product Overview

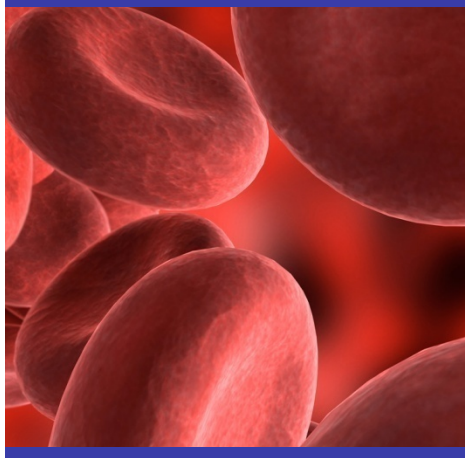
Palkion's lead agent, PN-3602, is an oral prolyl hydroxylase domain (PHD) inhibitor. PHDs regulate the activation of HIF-1 alpha, the master orchestrator of oxygen dependent gene expression. HIF-1 alpha causes activation of the endogenous EPO gene, providing natural EPO protein at physiological levels. In addition, HIF-1 alpha also regulates other aspects of effective red blood cell formation, including the promotion of iron absorption and transport to the erythropoietic progenitor cells and promoting a cellular microenvironment in the bone marrow conducive for erythropoiesis. It is expected that PN-3602 will allow more physiological anemia control that avoids not only the inconvenience of injections, limited storage options and high expenses but also side effects associated with un-physiological high serum EPO levels.

Approx 800,000 diagnosed anemic Pre-dialysis CKD patients are untreated in the US



The pre-dialysis USCKD Market:
Market is about \$1.3B; this covers treatment of 27% of the anemic patient population

The Palkion Opportunity:
Is a \$4B pre-dialysis anemia market

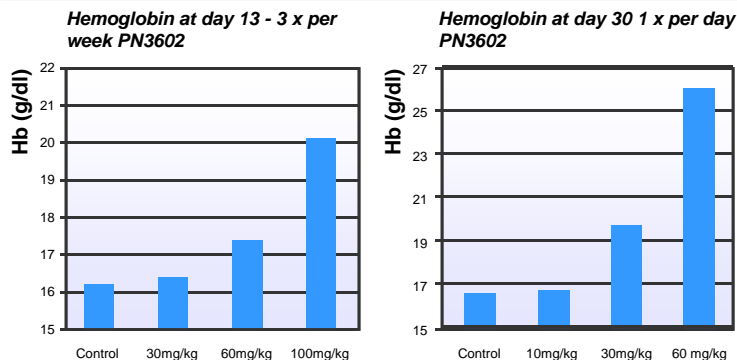


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Validation

PN-3602 derives from Palkion's portfolio of HIF-PIH inhibitors. A subset of these compounds underwent lead optimization using rational drug design, medicinal chemistry and in vitro and in vivo biological evaluation. PN-3602 was nominated as a candidate based on its ADME, toxicology and pharmacological profile. PN-3602 offers an excellent PK, bioavailability and safety profile. It increases reticulocytes, hemoglobin and hematocrit in a dose-dependent fashion in mice, rats and primates under a range of dosing and dose-frequency scenarios.

PN-3602 promotes dose-dependent hemoglobin increase in a rat model



In early-phase studies, we expect to achieve near-term demonstration of clinical proof of concept following a well-defined clinical and regulatory strategy. Proof of concept for oral HIF activation to correct anemia has been obtained in renal disease patients in Phase II with Fibrogen's first-in-class agent. Palkion positions PN-3602 as rapid follower for a large market opportunity currently dominated by recombinant proteins and peptides.

Palkion Management

Wendy Johnson, M.S., M.B.A. – President and Founder

Venture Partner at ProQuest Investments, Senior business and corporate development positions at Salmedix, Women First, Prism Pharmaceuticals, Cytel, Symbiotics Corp., and Murex (Cambridge, U.K.).

Hiroko Masamune, Ph.D. – VP Product Development

Drug Development at Pfizer (15 years) and Sr. Director of Pharmaceutical Sciences at Neurogen.

Robert Prince, Ph.D., J.D. – Sr. Director of Business Operations
Head of IP at Acadia Pharmaceuticals; Director of IP at Salmedix.

Julie Crawford, M.B.A. - Director, Finance and Administration

Director, Finance and Administration Aires Pharmaceuticals and Salmedix. Consultant Cabrellis Pharmaceuticals and Canji, Inc. Independent Contractor for Corvas International, Inc.

Key Advisors

Gary T. Elliott RPh, PharmD, Ph.D. – Product Development

Executive VP Product Development at Aires Pharmaceuticals. VP Product Development at Salmedix, Inc. Sr. Director Product Development at Corixa Corp., and VP Pharmaceutical Development at RibImmunoChem.

Marion Howard, Ph.D., M.D., M.B.A. – Strategic Marketing

Founder & Principal, Cambridge BioStrategies, LLC, Product Strategy Consultant to Shire (Epoetin delta); Corporate Development at Genzyme General.

Ricardo Ochoa, D.V.M. – Drug Safety

Board-certified veterinary pathologist, Vice President of Preclinical Safety at Neurogen; Executive Director at Pfizer Global R&D.

Richard Stead, M.D. – Acting CMO

Responsible for clinical development of Epogen and Neupogen at Amgen, VP Clinical Research and Development, Immunex; Acting CMO, Affymax.