Postsurgical Therapeutics Inc.

Safer and more effective cancer therapy

EXECUTIVE SUMMARY

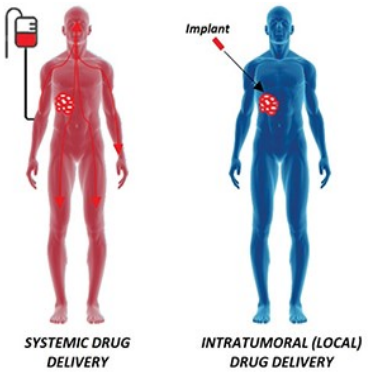
APRL 2024

OVERVIEW

Postsurgical Therapeutics Inc (PST) is a privately held California based pharmaceutical company founded in 2014. The company conducts R&D reformulating FDA approved targeted drugs. PST's proprietary formulations are designed to make the drugs safer and more effective when used in combination for the treatment of cancer patients.

THE PROBLEM (TOXICITY & RESISTANCE)

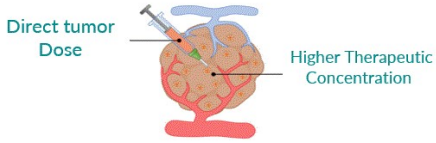
Two of the most important problems with cancer treatment are drug resistance and drug toxicity. Resistance can happen when the tumor drug target itself changes and the targeted therapy is not able to interact with it. Cancers also have an uncanny ability to circumvent drug treatments, even when the target is properly engaged, to find alternate paths (pathways) toward survival, growth and spread. A logical strategy is to treat cancers with multiple drugs that target the different cancer growth mechanisms or pathways. In other words, use a combination of drugs to head off potential resistance. However, a key limitation of cancer drug therapy is that it can be toxic to normal cells and tissues and this can pose a serious sometimes life-threatening risk for patients. A drug's toxicity profile can limit the amount and frequency of drug that can be given to patient. Importantly when two drugs are combined their toxicities can add up (cumulative toxicity) preventing the ability of an oncologist to use them as combined drug treatments.



PST SOLUTION (COMBINATORIAL LOCAL & ORAL TARGETED THERAPY)

Most cancer drugs are given orally or by intravenous injection (known as systemic dosing). This requires the drug to circulate throughout the whole body to eventually reach the tumor. Systemic dosing requires higher overall doses in order for the drug to accumulate at the tumor at sufficient concentrations to be effective.

PST's solution is to use a local intra-tumor (I.T.) injections using controlled release formulations enabling combinations of targeted therapies for safer and effective cancer treatment.



PST's technology called Combinatorial Local and Oral Targeted Therapy (CLOTT) was designed to address the core cause of cumulative toxicity resulting from combined targeted drug therapy and thereby improve drug safety, tolerance and efficacy.

CLOTT formulations utilize an FDA approved class of excipients known as Poly (lactic-co-glycolic acid) (PLGA). The formulations are engineered as micro-spheres or as gels to incorporate anti-cancer API's (Active Pharmaceutical Ingredients) in a manner that allows their controlled release over a predetermined extended period of time, locally at the site of injection within the tumor.

PST is concurrently developing an ultra-sound guided proprietary needle delivery system for precise dose localization utilizing a purposely engineered multi side-hole needle engineered to improve distribution of drugs across the tumor injection path. (Collaborations with EZONO, Germany and Lighteum, USA)

TECHNOLOGY ADVATAGES

Multi Drug Effectiveness

PST's CLOTT technology is designed to facilitate treatment of cancer patients with multiple drugs to cut-off cancer's escape routes while avoiding systemic side effects, thereby making cancer treatment safer, more tolerable, and more effective for patients.

Prevention of Systemic Toxicity

Using PST's CLOTT approach means drugs are injected directly into the tumor. The drugs do not need to be given systemically and therefore do not circulate through the whole body. This reduces the exposure of normal cells and tissues to the drugs toxicity.

Higher Drug Concentrations at Tumor

Intra-tumor dosing localizes the drugs at tumor and allows for high therapeutic concentrations for more effective tumor cytotoxicity.

Extended Drug Exposure at Tumor

Sustained release formulations ensure continuous exposure of cancer to the drugs over a 30 – 90 day period. PST's formulations are engineered to be retained within the tumor while also delivering drugs to the periphery of lesion injection site.

Multi-Route Flexibility

CLOTT'S allows for multi-route dosing. Intra-tumor treatment may be combined with oral or intravenous approaches. Different therapeutic strategies can be developed and tested to achieve maximum safety, tolerance, and efficacy.

INTELLECTUAL PROPERTY

PST's patent application (US 17/227,992) filed in the US and EU in 2021 is currently under review by the USPTO. PST continues to extend its IP portfolio to cover additional novel features and related methods. The main technology patent claims consist of "Compositions and methods for blocking both PI3K pathway and MAPK pathway for the treatment of solid tumors."

MARKET

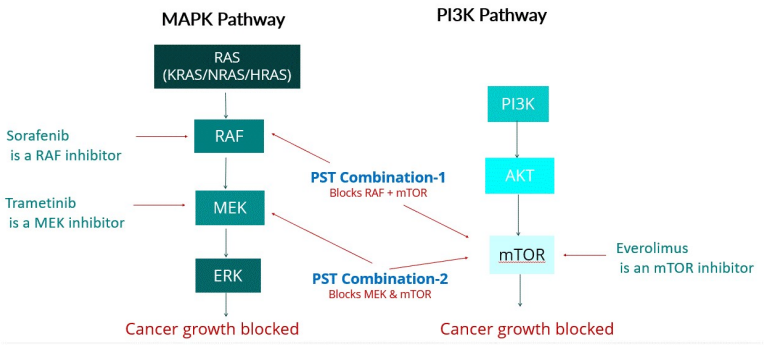
More than 20% of solid tumors are caused by KRAS mutations. Pancreatic cancer (>80%), colorectal cancer (40%) and lung cancer (35%). The KRAS market was a $20 Billion opportunity in 2022 with 60 drugs undergoing clinical trials and two approved drugs thus far (Sotorasib approved in 2021 from Amgen and Adagrasib approved in 2022 from Mirati Therapeutics). There are over 100 FDA approved anticancer targeted therapies on the market and many more in development. Worldwide market for targeted drugs was $70 – 80 billion in 2022 expected to grow to $100 – 120 billion by 2027. Importantly, dozens of targeted drugs will be losing patent protection over the next 5 years. This represents billions in revenue and an opportunity for off-patent combinations.

Cancer type	Current market	% Patients with KRAS mutations	Potential market for combination 1 & 2
Lung cancer	$29.5 B (2022)	35%	$10.3 B
Colorectal cancer	$18.6 B (2022)	40%	$7.4 B
Pancreatic cancer	$2.1 B (2022)	80%	$1.7 B
Gastric cancer	$3.94 B (2022)	25%	$1.0 B
Total potential market			$20.4 B

PIPELINE

PST's CLOTT technology is a platform technology. This means it can be extended to various drug combinations and cancers allowing for an extended product pipeline.

Currently the company has two active product formulations in development both at pre-clinical stage.



The selected APIs target two cancer pathways commonly used by cancer to resist treatment. These pathways are known as the PI3K and the MAPK pathways. Approximately 1/3 of cancers are caused by mutation in MAPK pathway while another 1/3 are caused by mutation in PI3K pathway. These two pathways crosstalk, meaning that if PI3K pathway is blocked by an inhibitor, cancer cells can activate MAPK pathway to re-grow or vice versa. Extensive attempts have been made by industry to block these pathways for treating various cancers however efforts have failed during early clinical trials mainly due to systemic-toxicity.

PST plans to apply the CLOTT platform to various drug combinations utilizing drugs that inhibit each of the two pathways.

PST LEAD PRODUCT PT104 E/T ISG:
Trametinib (MEK inhibitor, MAPK pathway) + Everolimus (mTOR inhibitor, PI3K pathway)

DEVELOPMENT MILESTONES

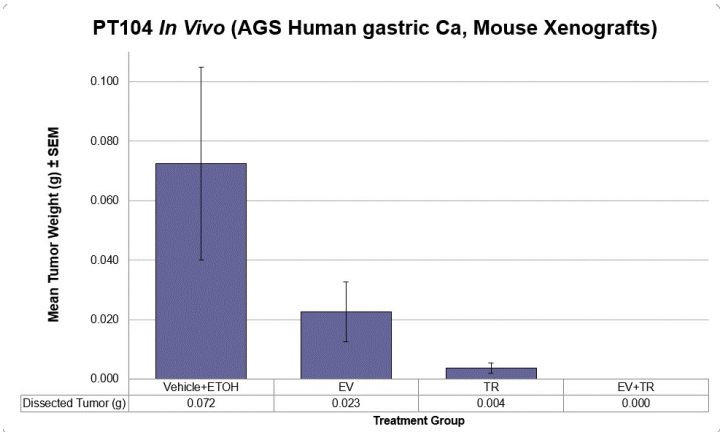
Lead product preclinical formulations completed.

PST has completed proof-of-concept studies including in vitro cyto-toxicity evaluations and preclinical in vivo xenograft studies.

Results demonstrate that the CLOTT technology can be effective at targeting three common KRAS sub mutations (G12C, G12D and G12V).

PST has also demonstrated that the combinations are superior to single agent treatment across multiple human tumor types (gastric, lung and pancreatic).

Based on these early results, formal development of the commercial formulation has commenced in collaboration with CDMO and evaluations for the selection of an initial cancer indication and a corresponding clinical protocol (collaboration with INCan).



LEADERSHIP

Soonkap Hahn, Ph.D.

CSO and Founder
A seasoned scientist, inventor, and entrepreneur

Dr. Hahn obtained his Ph.D. in organic chemistry from the Ohio State University. He conducted his post-doctoral research at Stanford University under late professor Carl Djerassi

Founder of six biotech companies:
- Novatrix: 1993 ($21M investment,3 US VCs).
- Biocept:1997 (>$300 M investment, IPO 2014)
- Avicule and JCSS Biomedical in 2004
- Curexo USA in 2006,
- Postsurgical Therapeutics in 2014

Experience & Deals

Asset transfer agreements with two public companies in Korea; Cuexo in 2006 and Kossen in 2019, License-in agreement with UCSD in 2004, Two acquisitions: Integrated Surgical Systems in 2006 and Proxy Diagnostics in 2008, Research agreements with Medtronics in 2007, Roche in 2011 and Visionary Therapeutics in 2007, Extensive experience in financing, M & A, technology development and licensing, 16 issued US patents.

DEVELOPMENT TAKE-AWAYS

- Active against 3 leading KRAS sub-mutations
- Active against at least 4 different cancer types
- Combinations are superior to single agent therapy
- I.T. dosing promises to prevent systemic toxicity
- I.T. dosing promises to increase drug at tumor
- Multi-route dosing potential
- CMC plans and clinical protocol under way
- Platform with multi-billion $ pipeline potential

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