INSPYR THERAPEUTICS

OTC/QB: NSPX
www.inspyrtx.com

Recent Stock Price (09/02/16) $0.13
52-Week Range $0.12 - $0.17
Market Capitalization - $5.4 M
Shares Outstanding - 41.8 M
Fiscal Year-End - December 31

DEVELOPING NOVEL THERAPEUTICS TO TREAT CANCER

Inspyr Therapeutics, Inc. is developing a novel technology platform that combines the powerful therapeutic thapsigargin with a patented prodrug delivery system that targets the release of drugs within solid tumors. Mipsagargin, its lead drug candidate, has been studied in a Phase 2 clinical trial in patients with advanced hepatocellular carcinoma (liver cancer) and has been granted Orphan Drug designation by the U.S. Food and Drug Administration (FDA) in this indication. Mipsagargin is currently being evaluated in Phase 2 clinical studies in patients with glioblastoma (brain cancer), prostate and clear cell renal cancers.

In August 2016, the company announced a name change to Inspyr Therapeutics (formerly GenSpera), the appointment of senior management and the initiation of two investigator-sponsored Phase 2 trials at the University of Texas Health Science Center to evaluate the safety and activity of mipsagargin in patients newly diagnosed with prostate cancer and renal cell carcinoma.

INVESTMENT HIGHLIGHTS

- **Precision-targeting prodrug mipsagargin** targets PSMA, (Prostate Specific Membrane Antigen) providing for broad utility across solid tumor types. Mipsagargin has a consistent safety profile validated by mechanism of action models conducted by Johns Hopkins University.
- **Compelling Phase 2 data** with mipsagargin includes observed prolonged disease stabilization in advance cancer patients, potential to improve survival and an attractive safety profile compared with other oncology therapeutics.
- **Well-defined development and regulatory paths** with ongoing and planned Phase 2 trials in hepatocellular carcinoma (HCC) and glioblastoma (GBM).
- **New, experienced leadership** with recent appointments of Chris Lowe as President & CEO and Dr. Ronald Shazer as SVP & CMO. Focus on building value by advancing clinical development of mipsagargin, and pursuing business development opportunities, royalties fees and a variety of out-license structures.

MIPSAGARGIN: POTENT THERAPY/POTENTIAL BROAD UTILITY

Synergistic mechanisms of action (MOA): Mipsagargin targets PSMA (Prostate Specific Membrane Antigen), which is expressed on the tumor vascular within multiple tumor types with no or limited expression on normal vasculature. PSMA expression detected in:

- >90% of HCC tumors[1]
- >100% of GBM[2]
- >85% Colorectal tumors[1]
- >75% Breast and Ovarian cancers[1]
- >66% Gastric cancers[1]
- >57% Melanoma cancer[1]

Targeted approach for improved tumor kill:

- Potent therapeutic, thapsigargin-derivative 12ADT, combined with protective peptide
- Peptide targets PSMA enzyme
- PSMA removes the peptide, releasing therapeutic that kills blood vessel that feed tumor
- 12ADT inhibits SERCA pump leading to apoptosis independent of growth rate

Well-defined development and regulatory paths: Mipsagargin's MOA has potential as monotherapy or in combination with standard of care.

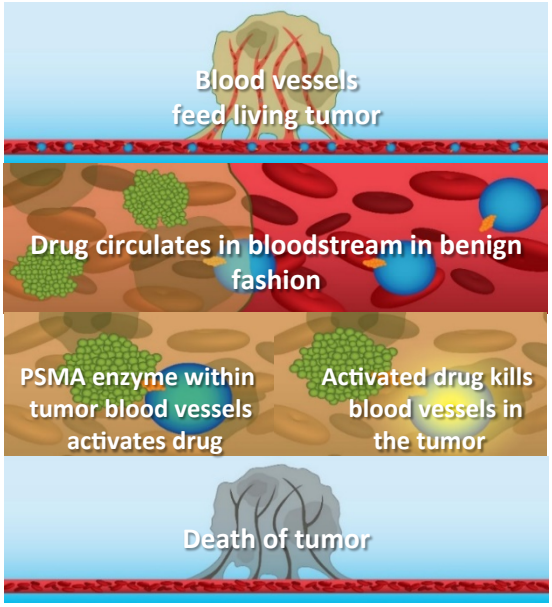
- Potential for expedited regulatory path in recurrent diseases
- Broader development plans for combination therapy to move into earlier lines of treatment

[1] Denmeade, S. et al. Engineering a prostate-specific membrane antigen–activated tumor endothelial cell prodrug for cancer therapy. *Science Translational Medicine*. 27 June 2012. doi: 10.1126/scitranslmed.3003886
[2] Wernicke, A.G. et al. Prostate-specific membrane antigen as a potential novel vascular target for treatment of glioblastoma multiforme. *Archives of Pathology & Laboratory Medicine*. November 2011.doi: http://dx.doi.org/10.5858/arpa.2010-0740-OA.

PRECISION TARGETING BY DESIGN

Targeted approach for safer profile:

- Manageable side effect profile
- No impact on bone marrow observed to date
- No observed effect on cardiovascular system



Potential for improved tumor kill and fewer side effects

PHASE 2 STUDY IN HCC

- Study completed in January 2015 in 25 patients refractory to Nexavar
- Data suggest clinical activity
  - Median time to progression of 4.5 months vs. 2.7 months historical control (primary endpoint)
  - 63% of patients experienced disease stabilization at 2 months
  - Prolonged disease stabilization (>5 months) in 37% of subjects
- Demonstrated decreased blood flow in liver tumors as measured by DCE-MRI
- Manageable side effect profile, including fatigue, nausea, rash, reversible creatinine increase; no apparent bone marrow effect

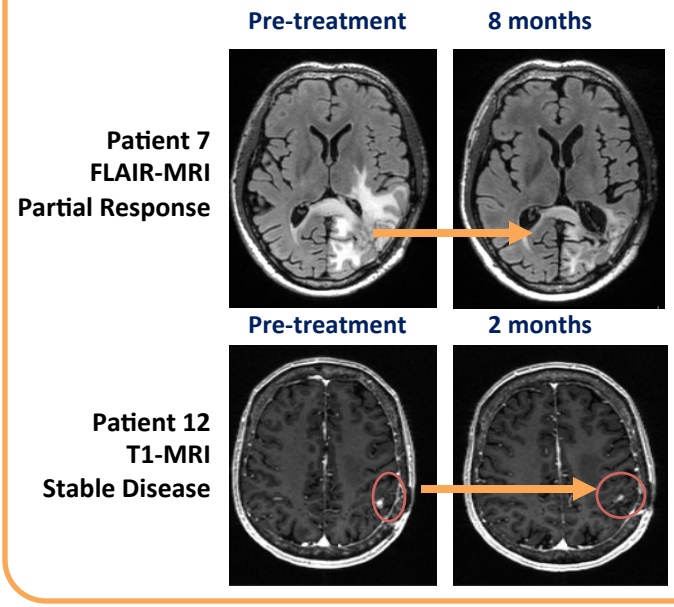
Efficacy (N=25 patients)	Results
Evaluable for Response	19 Patients (76%) 24% had received 2 or more prior systems therapies
Best Response	CR + PR 0 Patients SD 12 Patients (63%)
Tumor reduction	8 Patients (42%)
Time to Progression (TTP)	134 days (4.5 months; Range: 50 – 421 days)
Overall Survival (OS)	205 days (6.8 months; Range: 74 – 211 days)
Progression-Free Survival (PFS)	129 days (4.3 months; Range: 50 – 421 days)

Clinical Activity Observed

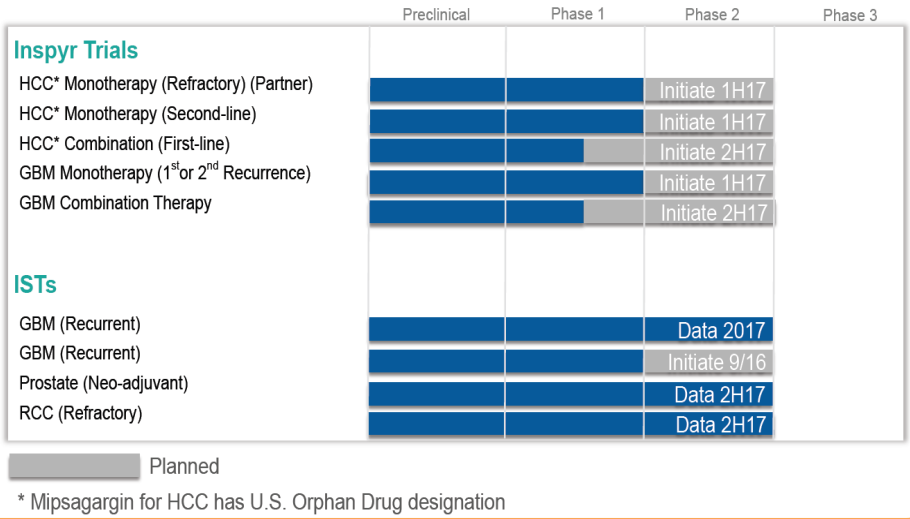
- Primary endpoint demonstrated:
  - 4.5 months TTP (median) for Mipsagargin in Nexavar – refractory patients
- By comparison:
  - 5.5 months TTP (median) for Nexavar in treatment-naïve patients
  - 2.7 months TTP (median) for historical control in Nexavar-refractory patients
- 63% of patients experienced disease stabilization
- 37% of patients showed prolonged disease stabilization (≥5 months)

PHASE 2 STUDY IN GBM

- Two-stage, single-arm, open-label, investigator-sponsored trial initiated in 3Q14
- Stage 1 completed with encouraging interim data
  - 3 of 11 evaluable patients with clinical benefit
    - Stable disease for at least 2 months (2 stable disease, 1 partial response); reduction in tumor volume
    - 1 patient with stable disease at 9 months-met primary endpoint of 6-month progression-free survival
  - No dose-limiting toxicities have occurred; preliminary evidence suggests mipsagargin is well tolerated and may induce disease stabilization or treatment response
  - All 3 responders have ≥2+ PSMA staining
  - Side-effect profile similar to Phase 2 liver cancer study
- Stage 2 underway; expanded to up to 34 patients



MIPSAGARGIN CLINICAL DEVELOPMENT



* Mipsagargin for HCC has U.S. Orphan Drug designation

Multilayered Patent IP Platform

- Clinically used mipsagargin covered in U.S. between 2018-2026
- 8 patent families
- 15 U.S. patents issued or with notice of allowance
- 43 applications worldwide currently in progress

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