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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

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**FORM 8-K**

**CURRENT REPORT**  
Pursuant to Section 13 or 15(d) of  
the Securities Exchange Act of 1934

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**Date of Report (Date of earliest event reported): January 23, 2017**

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**DIFFUSION PHARMACEUTICALS INC.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation)

**000-24477**  
(Commission File  
Number)

**30-0645032**  
(I.R.S. Employer  
Identification No.)

**2020 Avon Court, #4**  
**Charlottesville, Virginia**  
(Address of principal executive offices)

**22902**  
(Zip Code)

**(434) 220-0718**  
(Registrant's telephone number, including area code)

**Not applicable**  
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
  - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
  - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
  - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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**Item 5.03 – Amendment to Articles of Incorporation or Bylaws; Change in Fiscal Year.**

On January 23, 2017, Diffusion Pharmaceuticals Inc. (the “Company”) filed a Certificate of Amendment to its Certificate of Incorporation (the “Charter Amendment”) with the Secretary of State of the State of Delaware, effective immediately, a copy of which is attached hereto as Exhibit 3.1 and is incorporated herein by reference. The Charter Amendment amended the Company’s Certificate of Incorporation to increase the number of authorized shares of preferred stock from 5,000,000 shares to 30,000,000 shares. The Charter Amendment was approved by the Company’s stockholders at a special meeting held on January 6, 2017, as set forth in the Company’s Current Report on Form 8-K filed with the Securities and Exchange Commission on January 9, 2017.

**Item 7.01 Regulation FD Disclosure.**

Attached as Exhibit 99.1 and furnished for purposes of Regulation FD is a presentation to be provided to prospective investors in the Company beginning on or about Thursday, January 26, 2017.

The information in Item 7.01 of this Current Report on Form 8-K (including Exhibit 99.1) is being furnished solely to satisfy the requirements of Regulation FD and shall not be deemed to be “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities of that section, nor shall it be deemed to be incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act.

**Item 9.01 Financial Statements and Exhibits.**

(d) Exhibits.

<u>Exhibit Number</u>	<u>Description</u>
3.1	Certificate of Amendment of the Certificate of Incorporation of Diffusion Pharmaceuticals Inc., as filed with the Secretary of State of the State of Delaware on January 23, 2017.
99.1	Diffusion Pharmaceuticals Inc. Presentation.

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**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: January 26, 2017

**DIFFUSION PHARMACEUTICALS INC.**

By: /s/ David G. Kalergis

Name: David G. Kalergis

Title: Chief Executive Officer

# Delaware

The First State

Page 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "DIFFUSION PHARMACEUTICALS INC.", FILED IN THIS OFFICE ON THE TWENTY-THIRD DAY OF JANUARY, A.D. 2017, AT 2:18 O`CLOCK P.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE KENT COUNTY RECORDER OF DEEDS.



5768394 8100  
SR# 20170384099

You may verify this certificate online at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)

A handwritten signature in black ink, appearing to read "JBULLOCK", is written over a horizontal line. Below the line, the text "Jeffrey W. Bullock, Secretary of State" is printed.

Jeffrey W. Bullock, Secretary of State

Authentication: 201914495  
Date: 01-23-17

State of Delaware  
Secretary of State  
Division of Corporations  
Delivered 02:18 PM 01/23/2017  
FILED 02:18 PM 01/23/2017  
SR 20170384099 - File Number 5768394

**CERTIFICATE OF AMENDMENT  
OF THE  
CERTIFICATE OF INCORPORATION (AS AMENDED)  
OF  
DIFFUSION PHARMACEUTICALS INC.**

**DIFFUSION PHARMACEUTICALS INC.**, a corporation incorporated and existing under and by virtue of the General Corporation Law of the State of Delaware (the "Corporation") does hereby certify:

FIRST: That, at a meeting of the Board of Directors of the Corporation (the "Board of Directors") on November 23, 2016, a resolution was duly adopted setting forth a proposed amendment to the Certificate of Incorporation (as amended) of the Corporation in the form set forth below (the "Charter," and such amendment, the "Amendment"), declaring said Amendment to be advisable and calling for consideration of said proposed Amendment by the stockholders of the Corporation.

"RESOLVED, that the Board of Directors has deemed it advisable and in the best interest of the Corporation to amend the Charter, to (i) delete the following sentence from Article IV of the Charter:

"A. The total number of shares of common stock which the Corporation shall have authority to issue is 1,000,000,000, at a par value of \$0.001 per share ("Common Stock"), and the total number of shares of preferred stock which the Corporation shall have authority to issue is 5,000,000, at a par value of \$0.001 per share ("Preferred Stock")."

and (ii) replace such sentence with the following:

"A. The total number of shares of common stock which the Corporation shall have authority to issue is 1,000,000,000, at a par value of \$0.001 per share ("Common Stock"), and the total number of shares of preferred stock which the Corporation shall have authority to issue is 30,000,000, at a par value of \$0.001 per share ("Preferred Stock");"

SECOND: Thereafter, pursuant to the resolution of the Board of Directors, the proposed Amendment was approved by the stockholders of the Corporation at a special meeting of stockholders on January 6, 2017.

THIRD: That the Amendment was duly adopted in accordance with the provisions of Sections 242 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, the Corporation has caused this Amendment to the Certificate of Incorporation of the Corporation (as amended) to be executed by David G. Kalergis, its Chief Executive Officer, on this 23rd day of January, 2017.

DIFFUSION PHARMACEUTICALS INC.

By: 

Name: David G. Kalergis

Title: Chief Executive Officer

## Forward-Looking Statements

**Diffusio<sub>2</sub>n**  
Pharmaceuticals Inc.

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This presentation contains forward-looking statements within the meaning of U.S. securities laws that are intended to be covered by the safe harbors created by those laws. These statements include, but may not be limited to, our operating and growth strategy, including our product development plans. Such statements may be identified by the use of forward-looking terminology, such as “may,” “will,” “could,” “should,” “believe,” “expect,” “future,” “potential,” “anticipate,” “intend,” “plan,” “estimate,” or the negative or other variations of these words or comparable terminology. The outcome of the events described in these forward-looking statements is subject to significant risks, including those disclosed in our periodic reports filed with the Securities and Exchange Commission. Actual results could differ materially from the forward-looking statements made in this presentation. Although we believe that the assumptions underlying the forward-looking statements are reasonable, any assumptions could be inaccurate, and therefore, there can be no assurance that the forward-looking statements included in the this presentation, will prove to be accurate. In light of the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of such information should not be regarded as a representation by the Company or any other person that the objectives and plans of the Company will be achieved. Further, we undertake no obligation to revise such forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

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## Offering Summary

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Name of Issuer	Diffusion Pharmaceuticals Inc. (NasdaqCM: DFFN)
Minimum / Maximum Offering	\$5 million / \$15 million (may be increased to \$25 million upon DFFN's and Maxim Group's mutual agreement)
Type of Security	Series A Convertible Preferred Stock
Offering Price	Lower of (i) \$2.80 per share or (ii) the price equal to a 30% discount to the 10 day VWAP a/o day before initial closing
Dividends	8% Cumulative, Preferred Dividend paid Semi-annually in Common Stock
Warrants	Five-year Warrant exercisable for one share of Common Stock, exercisable at 110% of Offering Price
Make-Whole Adjustment	If DFFN raises more than \$10 million over the next 3 years at a share price less than the Offering Price, DFFN will then issue a number of shares of Common Stock equal to the additional number of shares of Common Stock that such shares of Preferred Stock would be convertible into if the conversion price of the Preferred Stock was equal to 105% of the Make-Whole Price
Use of Proceeds	Research & Development and General Corporate Purposes
Placement Agent	Maxim Merchant Capital, a division of Maxim Group LLC

# Diffusion<sub>2</sub>n

Pharmaceuticals Inc.

*Better Treatments for Cancer*

David Kalergis, CEO  
[dkalergis@diffusionpharma.com](mailto:dkalergis@diffusionpharma.com)

January 26, 2017  
[www.diffusionpharma.com](http://www.diffusionpharma.com)

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## Combating Cellular Oxygen Deprivation to Treat Unmet Medical Needs

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**Diffusio<sub>2</sub>n**  
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- First-in-class small molecules that safely re-oxygenate oxygen deprived (hypoxic) tissue by a novel mechanism; acts alone or with other treatments
- Multiple opportunities in unmet medical needs across \$ billion markets
- Initial oncology focus uses lead molecule TSC to enhance the efficacy of radiation and chemotherapy:
  - Glioblastoma brain cancer; Phase 2 successfully completed, Phase 3-ready design guided by FDA; Granted Orphan Drug Designation
  - Metastatic pancreatic cancer; Phase 2 program design guided by FDA and world experts
  - Metastatic brain cancer; Granted Orphan Drug Designation
- Other Phase 2-ready hypoxia-related follow-on indications, supported by compelling clinical and preclinical data:
  - Peripheral arterial disease; Phase 2 study successfully completed
  - Stroke, myocardial infarction and emergency medicine
  - Respiratory diseases, including COPD
  - Neurodegenerative diseases
- IP patent portfolio protection through 2031
- Experienced management, directors, advisors and key investors

# Management & Board of Directors

**Diffusi<sup>o</sup><sub>2</sub>n**  
Pharmaceuticals Inc.

## Executive Management

**David Kalergis, JD/MBA -- CEO, Chair & Co-Founder**

Life sciences serial entrepreneur, former Principal and General Counsel PRA International

**John L. Gainer, PhD -- CSO & Co-Founder**

Professor Emeritus University of Virginia, Chemical Engineering, Inventor of our TSC Technology

**David Jones, MD -- CMO**

Director of Thoracic Oncology Program at Memorial Sloan Kettering Cancer Center, Principal Investigator in 17 oncology clinical trials

**Thomas Byrne, MS, JD -- General Counsel**

Genentech, Amgen, Yale University, UVA

**Ben Shealy, CFA, MBA -- SVP Finance**

John Hancock buy side, DLJ sell side, VP M&A Corporate Software Rebar

## Board of Directors/Key Shareholders

**David Kalergis, JD/MBA -- CEO, Chair & Co-Founder**

**Isaac Blech -- Director/Vice Chair/Key Shareholder**

World Class Biotechnology Entrepreneur; founded leading companies Celgene, ICOS, Pathogenesis, Genetic Systems.

**John L. Gainer, PhD -- CSO & Co-Founder**

**Alan Levin -- Director**

Pharma Financial Executive, Former EVP & CFO of Endo Health Solutions, Former SVP & CFO of Pfizer

**Robert Adams, JD -- Director**

Former partner at Nixon & Vanderhye, Specialty US Patent and International Patent Licensing

**Mark T. Giles, JD -- Director**

Sole managing member of private investment company, Former chair & CEO of Virginia National Bank

**Sol Barer, PhD -- Shareholder**

Former CEO & Chairman of Celgene Corporation, Current Chairman of Centrexion, Edge Therapeutics.

**Frank Yu -- Shareholder**

Founder and CEO, Ally Bridge Group, a leading China-global cross-border healthcare-focused investment group.

## World Class Advisors

**Diffusio<sub>2</sub>n**  
Pharmaceuticals Inc.

### Diffusion Pharmaceuticals' Scientific Advisory Board

**Guy M. Chisolm, PhD, SAB Chair**

Professor, (ret.) Department of Cellular and Molecular Medicine;  
Vice Chair of Lerner Research Institute at Cleveland Clinic

**Gene H. Barnett, MD., MBA, FACS**

Director, Rose Ella Burkhardt Brain Tumor and Neuro-Oncology  
Center, Cleveland Clinic Neurological Institute

**William R. Hiatt, MD**

Professor for cardiovascular research at the University of  
Colorado School of Medicine, Division of Cardiology with a  
clinical and research focus in vascular medicine

**Karen C. Johnston, MD, MSc**

Harrison Distinguished Professor, Chair of Neurology at  
University of Va. Leads Phase III Shine ischemic stroke trial

**Jeffrey L. Saver, MD, FAHA, FAAN, FANA**

Director of the UCLA Stroke Unit, and Professor and SA Vice-  
Chair of Neurology at the David Geffen School of Medicine

**Kathleen A. Welsh-Bohmer, Ph.D., ABPP-CN**

Director of the Joseph and Kathleen Bryan Alzheimer's Disease  
Research Center (Bryan ADRC) at Duke Medical Center

### Scientific & Clinical Advisors (Cancer Program)

**Daniel Von Hoff, MD**

Physician in Chief and Director of Translational Research at  
TGen in Phoenix. Chief Scientific Officer for US Oncology  
and for Honor Health's Clinical Research Institute

**Aimery de Gramont, MD, PhD**

Founder, driving force and chairman of the French ARCAD  
Foundation. Head of the Internal Medicine / Oncology  
department at Saint-Antoine Hospital in Paris

**Josep Taberero, MD**

Head of the Medical Oncology Department of Vall d'Hebron  
University Hospital, Director of Clinical Research at VHIO

**Clet Niyikiza, PhD**

Previous Eli Lilly, GSK, Merrimack Pharma

# Diffusio<sub>2</sub>n

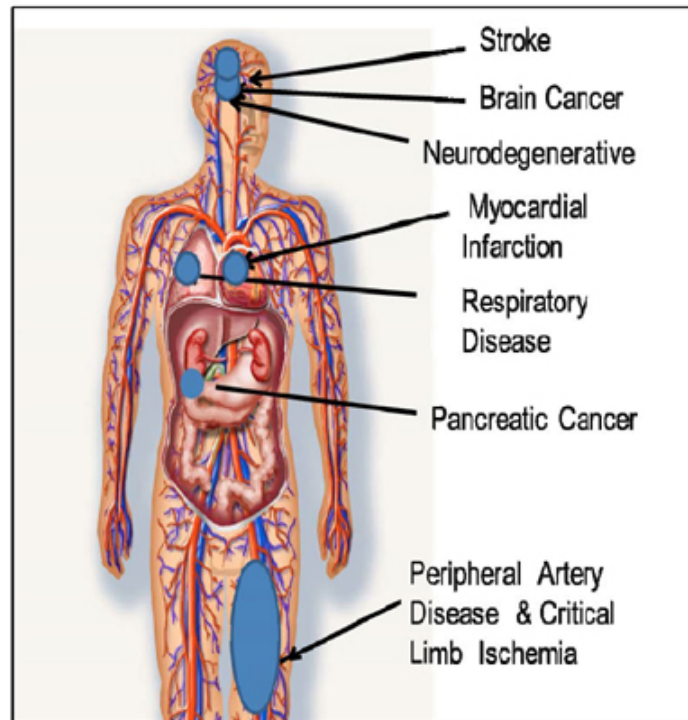
Pharmaceuticals Inc.

## Target Markets

Hypoxia-related conditions, with an initial  
focus on oncology

# Hypoxia: Cellular Oxygen Deprivation

- Insufficient oxygen supply ("hypoxia") to the body or a region of the body causes major clinical problems in many life-threatening diseases
- Hypoxia is an especially critical obstacle in the treatment of cardiovascular and respiratory diseases, as well as in cancer
- A successful new approach to treating hypoxia would open numerous unmet medical needs in \$ billion markets



- A common feature of many solid cancers
- Caused by tumors outgrowing their blood supply
- Through HIF1 $\alpha$  up-regulation, hypoxia is associated with many negative effects that lead to aggressive tumor phenotypes
  - Increased angiogenesis
  - Increased metastatic potential
  - Increased resistance to treatment
    - Cytotoxic therapy
    - Radiation therapy
- TSC re-oxygenates hypoxic tissue systemically, including cancerous tissue

Cancers known to have hypoxia-related treatment-resistance:

### Glioblastoma Multiforme

Worldwide Market \$1B +  
12,000 Patients in the USA  
28,000 Patients worldwide

### Pancreatic Cancer

Worldwide Market \$3B +  
49,000 Patients in the USA  
100,000 Patients worldwide

### Metastatic Brain Cancer

Worldwide Market \$5B +  
170,000 Patients in the USA  
375,000 Patients worldwide

Other hypoxic cancers include breast, lung and ovarian

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*With increasing incidence and mortality, cancer is the leading cause of death in China and is a major public health problem.*



4.3 million new cancer cases in 2015

12,000 newly diagnosed invasive cancer cases per day

2.8 million cancer deaths in 2015

7,500 people die every day from cancer

*Almost 22 percent of global new cancer cases and 27 percent of global cancer deaths occur in China*



# Diffusi<sub>o</sub><sub>2</sub>n

Pharmaceuticals Inc.

TSC Technology, Pipeline  
& Mechanism



**New Chemical Entity with Novel Mechanism of Action  
that Enhances Oxygen Diffusion to Hypoxic Regions in  
Many Disease Settings**

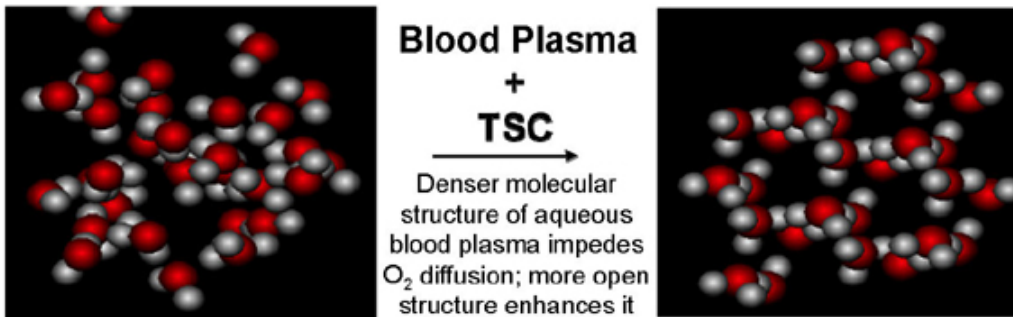
- ✓ TSC developed at University of Virginia (USA) by Professor John Gainer, Diffusion Pharma's Co-Founder
- ✓ Initially developed under a grant from US Office of Naval Research as an emergency treatment for battlefield casualties suffering life-threatening hypoxia from blood-loss
- ✓ Transitioned to oncology clinical trials as a first focus, based on promising pre-clinical and human safety and efficacy data

## TSC's Mechanism of Action

**Diffusio<sub>2</sub>n**  
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- First modern drug compound designed to harness the “**cosmotropic**” effect to impart systemic therapeutic benefit
  - When added to an aqueous solution such as blood plasma, cause the aqueous molecules to form more hydrogen bonds with each other
- Additional hydrogen bounds change arrangement of molecular structure of the aqueous portion of blood plasma
  - Oxygen can more easily diffuse into hypoxic tissue due to more open structural arrangement

Denser molecular structure → (additional hydrogen bonds) → more open molecular structure



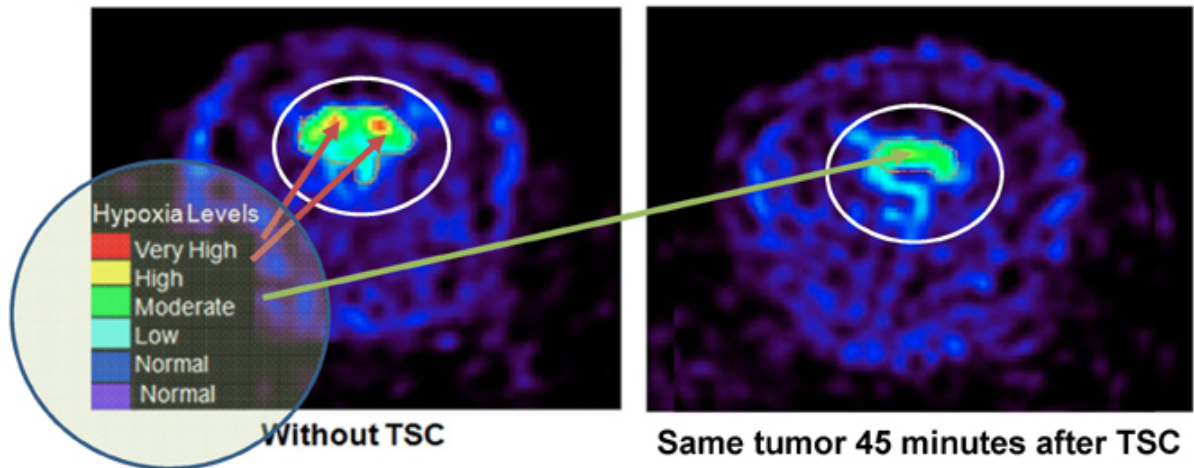
## Mechanism of Action Validated

- Computer simulation studies demonstrate enhanced diffusion of oxygen
- In vitro studies demonstrate enhanced hydrogen bonding
- Direct oxygen measurement in tissue with PET, LICOX, TCOM
- Hypoxia-related animal models demonstrate improvements in key parameters
- Phase 2 proof of concept trials in PAD and oncology demonstrate favorable safety profile, clinical efficacy, and optimal dosing regimens
- Phase 3 ready

## TSC Reduces Brain Tumor Hypoxia

Allows better results with radiation and chemotherapy

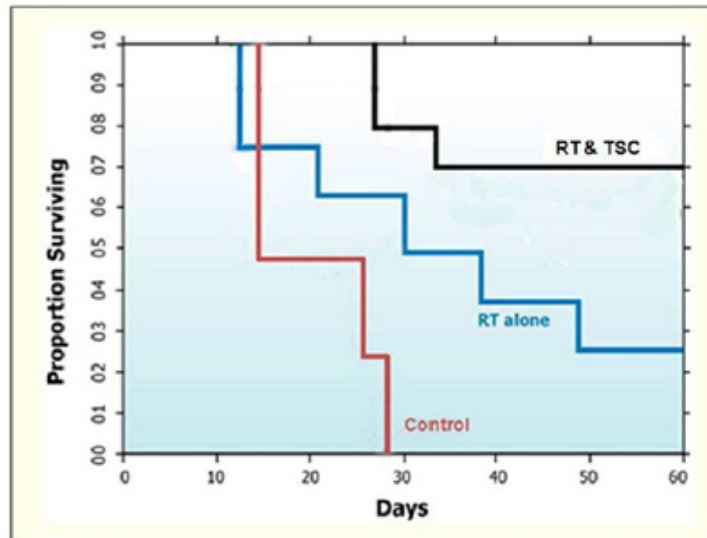
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Pharmaceuticals Inc.



PET scan showing hypoxia levels in rat brain tumor, before and after TSC.

## TSC with Radiation Therapy Triples Survival in Animal Models

- Rat glioblastoma cells implanted in rat brains
- On day 10, rat brains received radiation therapy
- TSC increased survival from 28% to 73%
- Tumor remission seen in TSC survivors



**Sheehan J, et al.** Trans sodium crocetinate sensitizes glioblastoma multiforme tumors to radiation. *J Neurosurg* 108:972-978, 2008.  
See also, **Sheehan J, et al**, TSC with Radiation and Temozolomide; *J Neurosurg* 113:234-239, 2010.

# Diffusion<sub>2</sub>n

Pharmaceuticals Inc.

## Oncology Clinical Programs

**First Targeting Treatment Resistance in Solid Cancers  
Using TSC**

Glioblastoma Multiforme  
Pancreatic Cancer  
Metastatic Brain Cancer



### About TSC

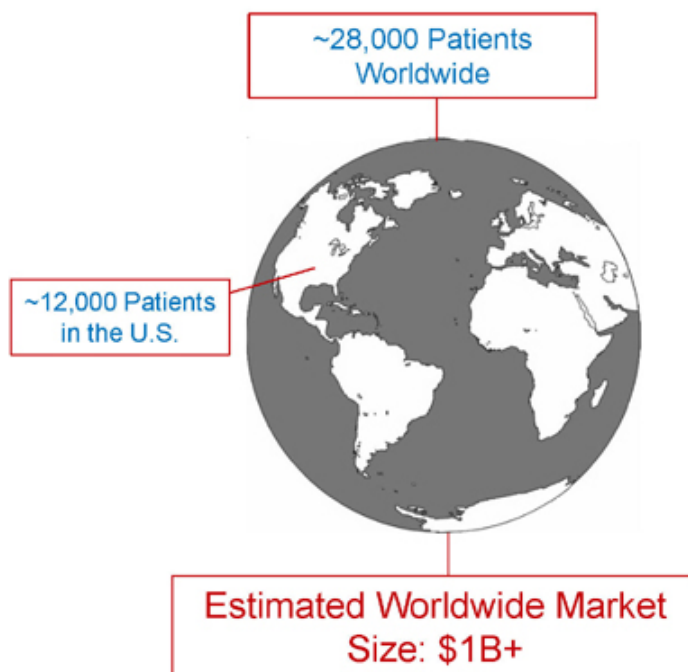
- Administered via bolus IV
- Tested in 148 human subjects in Phase 1 & 2 trials
- No dose-limiting side effects or serious adverse events reported
- CMC: Phase 3 scale-up in process
- FDA: Two open INDs (Cardio-Renal and Oncology)
- FDA Orphan Drug Designation granted in multiple indications

### TSC Advantages

- Cosmotropic: Imparts greater molecular order to blood plasma
- Facilitates diffusion of oxygen into hypoxic tissue
- Mechanism does not require blood brain barrier penetration
- Does not hyper-oxygenate normal tissue
- Safely treats hypoxia-related conditions such as stroke and respiratory
- Increases tumor-killing power of radiation and chemotherapy

## Glioblastoma Market Overview

- Life-threatening cancer of glial cells in the brain with an average life expectancy post-diagnosis < 2 years
- Standard of care is radiation and chemotherapy (temozolomide)
- One of the most hypoxic cancers, causing significant resistance to both radiation and chemotherapy
- Phase 1/2 clinical trial with TSC plus radiation and chemo showed 37% increase in overall survival

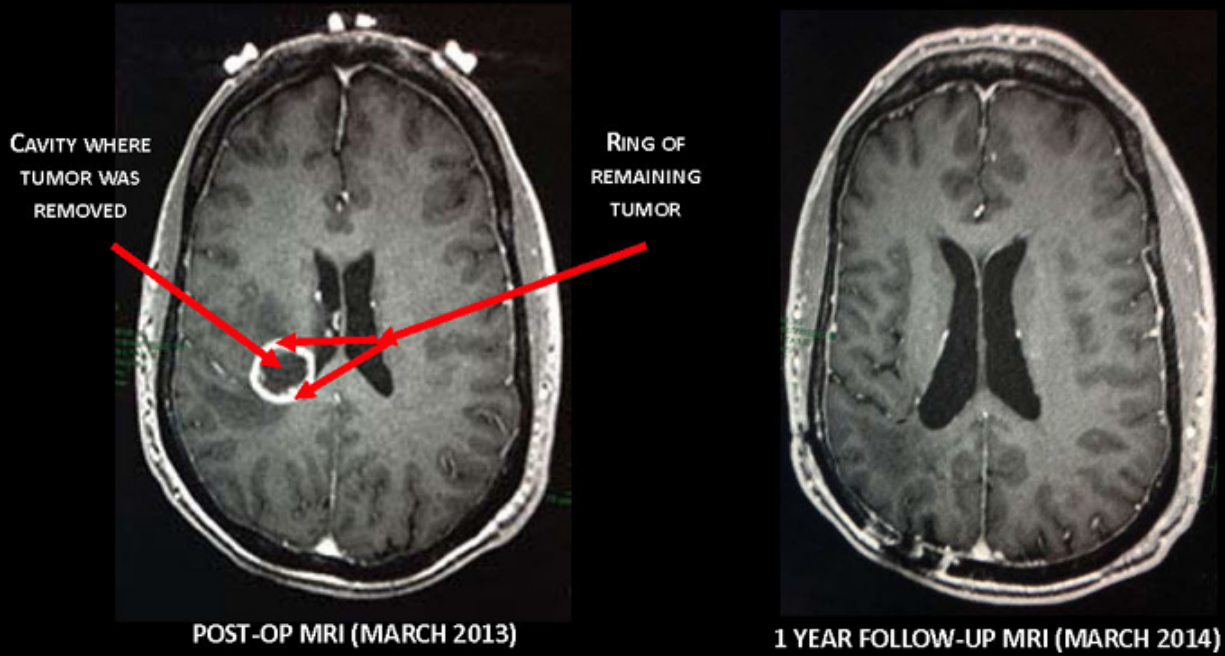


## Glioblastoma Phase 2 Clinical Trial Successfully Completed

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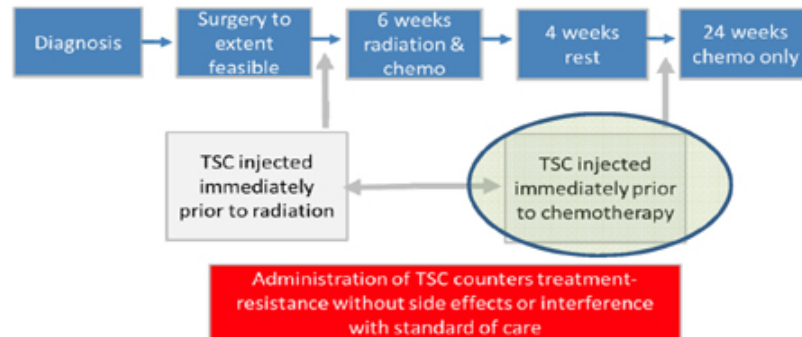
Design	Results
<ul style="list-style-type: none"><li>▪ 59 newly diagnosed GBM patients enrolled at 18 cancer centers</li><li>▪ Open label, historical control study</li><li>▪ TSC dosed 3X/week for 6 weeks concurrent with standard radiation and chemotherapy</li><li>▪ Patients stratified for analysis:<ul style="list-style-type: none"><li>- Surgery for tumor removal</li><li>- No surgery (inoperable/biopsy only)</li></ul></li><li>▪ Primary endpoint: survival at 2 years</li><li>▪ Other endpoints: tumor status, performance, quality of life (Q of L)</li></ul>	<ul style="list-style-type: none"><li>▪ <b><i>Results reported in the <u>Journal of Neurosurgery</u></i></b></li><li>▪ <b><i>Overall survival increased by 37% at 2 years</i></b></li><li>▪ <b><i>Survival of inoperable patients at 2 years increased by 100%</i></b></li><li>▪ <b><i>Clean safety profile, no serious adverse events attributed to TSC; no negative effects on Q of L</i></b></li><li>▪ <b><i>Tumor regression in many patients; 11 target tumors reported “undetectable”</i></b></li></ul>

TSC/GBM TRIAL – PATIENT 427



- Held August 2015 at FDA headquarters
- Single Phase 3 Study could serve as the basis for approval
- Phase 3 trial design guidance received:
  - Phase 3 study of TSC as first line treatment with radiation/chemo in 400 newly diagnosed primary brain cancer patients
  - Randomized, controlled, multi-center pivotal study
  - Primary clinical endpoint is survival based on time-to-event
  - Significant flexibility to increase TSC dosing exposure based on Phase 2 study results and supporting animal toxicology
- Assuming success, the FDA-agreed label/indication is for entire range of first line patients: “TSC is indicated in combination with radiotherapy and TMZ for the initial treatment of GBM”
- Enrollment targeted to begin in 2017

## Phase 3 GBM Pivotal Trial Design

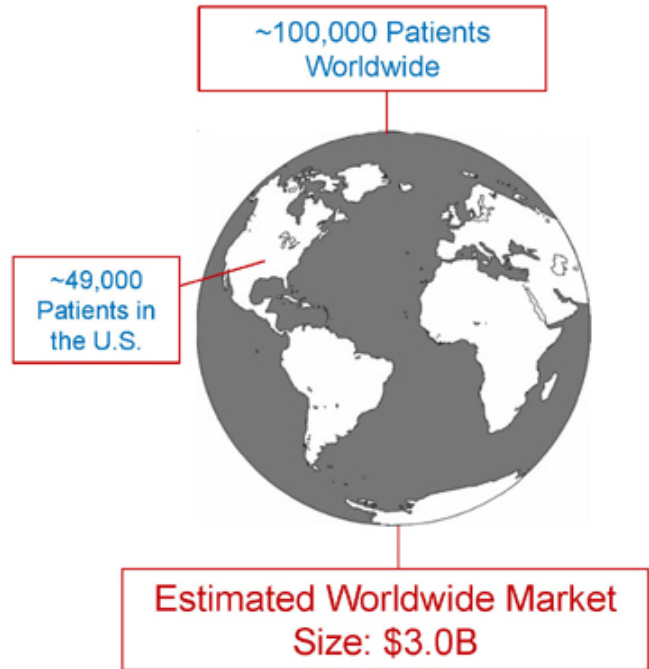


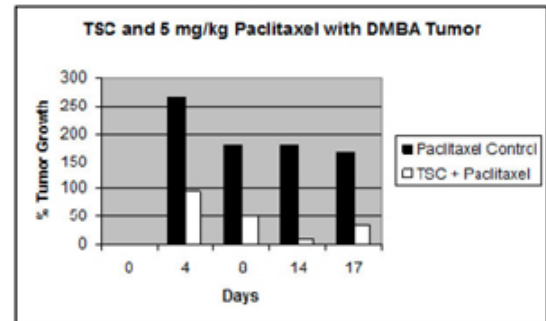
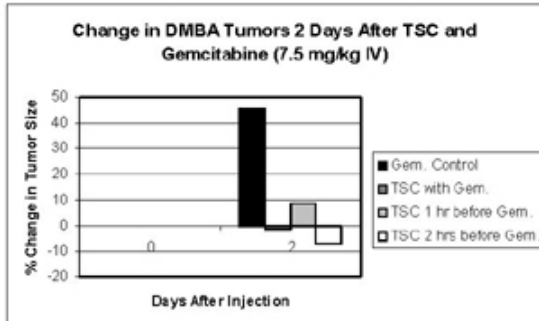
### DESIGN

- Randomized, placebo-controlled
- Primary endpoint is overall survival; secondary endpoints are tumor status, performance, Q of L
- 400 newly diagnosed GBM patients (200 treated/200 control) at 100 sites in US, EU and Asia
- TSC dosing treatment period expanded from 18 to 36 doses
- Dosing plan: TSC dosed 3X/week for first 6 weeks concurrent with standard radiation and chemotherapy; 1 month patient rest; 3X/week for the first week of the following 6 months

## Pancreatic Cancer Market Overview

- Life-threatening cancer of the pancreas with an average life expectancy post-diagnosis < 1 year
- Emerging standard of care is radiation and chemotherapy
- One of the most hypoxic cancers, causing significant resistance to both radiation and chemotherapy
- TSC shown pre-clinically to be a powerful potentiator of current SOC first line pancreatic cancer treatment regimen (gemcitabine plus nab-paclitaxel)

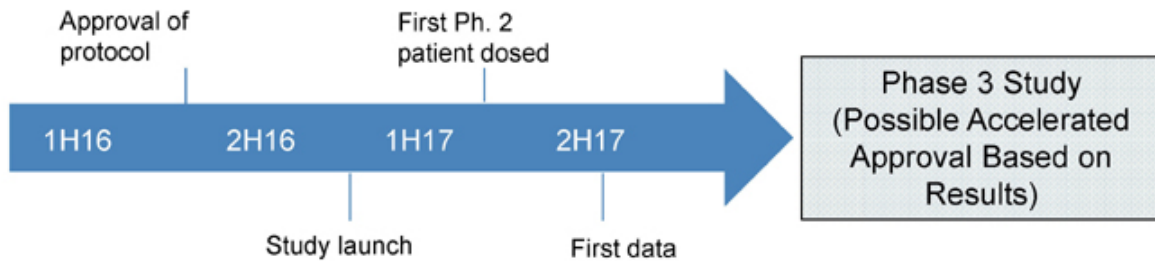




- In various animal models, TSC significantly enhances the standard-of-care chemotherapies used in the treatment of pancreatic cancer (gemcitabine and paclitaxel.)
- For gemcitabine, administration of TSC at 2 hours prior to chemo causes significant tumor volume reduction
- For paclitaxel, administration of TSC significantly slowed tumor growth.
- Note: Both gemcitabine and paclitaxel were developed and FDA-approved under programs led by members of the Diffusion Scientific Advisory Board.



# Pancreatic Cancer Trial Design

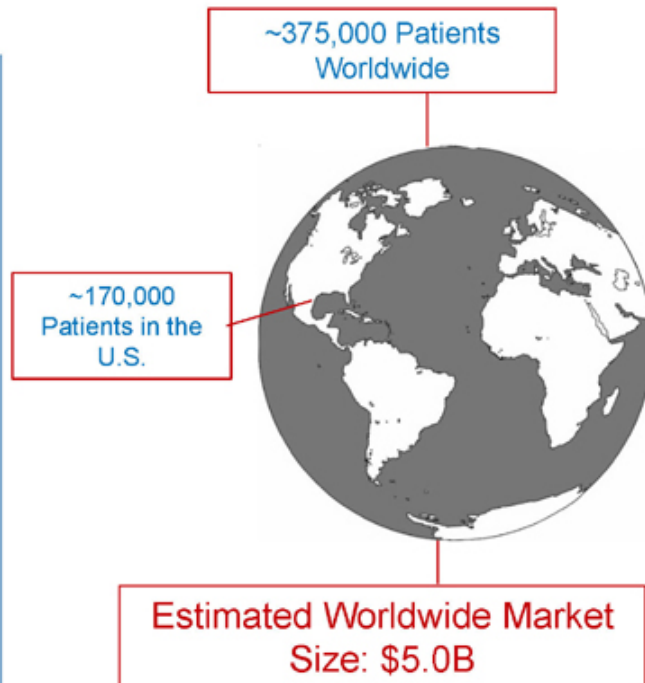


## DESIGN

- Phase 2 study design in pancreatic cancer based on preclinical data and on completed Phase 2 safety and efficacy profile in other hypoxic tumors
- TSC shown to potentiate efficacy of gemcitabine and nab-paclitaxel in tumor models
- Shorter treatment period and patient survival accelerates trial results
- Endorsed by global KOLs; Dr. Daniel Von Hoff to be Principal Investigator
- Currently interacting with FDA regarding optimal trial design/end-points/patient numbers

# Metastatic Brain Cancer

- Life-threatening cancer that has metastasized to the brain
- Average life expectancy post-diagnosis of < 1 year
- Standard of care is radiation only
- One of the most hypoxic cancers, causing significant resistance to radiation treatment
- No approved drug for metastatic brain cancer
- TSC granted FDA Orphan Designation



## Animal Model of Brain Metastases Shows Significant Efficacy

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**Diffusio<sub>2</sub>n**  
Pharmaceuticals Inc.

	At 30 Days	At 45 Days	At 60 Days
No Treatment (% Surviving)	0%	0%	0%
Radiation Only (% Surviving)	65%	40%	25%*
Radiation + TSC (% Surviving)	80%	70%	70%**

*J Neurosurg* 108:972-978, 2008.

- Cancer cells implanted in rat brains simulate metastases.
- All untreated animals dead within 30 days. (0% survival.)
- \*Radiation-only treatment group had 25% survival at 60 days. MRI shows substantial tumor remaining.
- \*\*Radiation plus TSC treatment group had 70% survival at 60 days. Complete tumor remission in TSC survivors, based on MRI.

# Diffusio<sub>2</sub>n

Pharmaceuticals Inc.

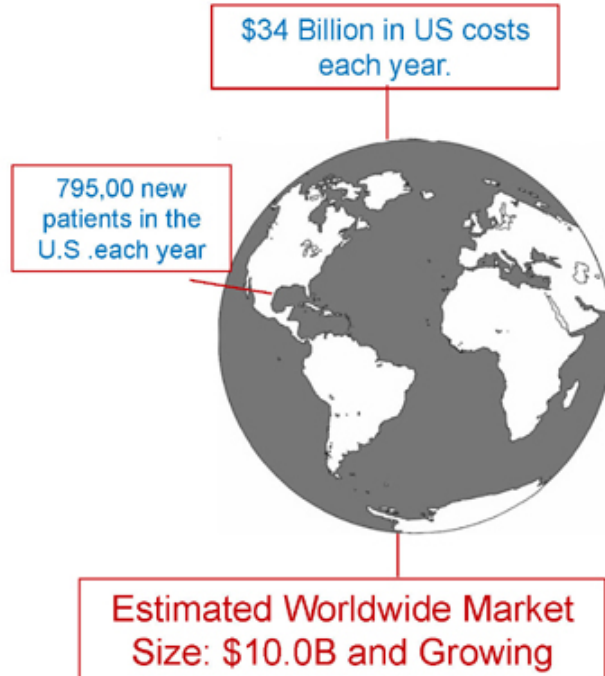
## Other Indications

**Pre-clinical data supports TSC as a treatment for other hypoxia-driven conditions such as:**

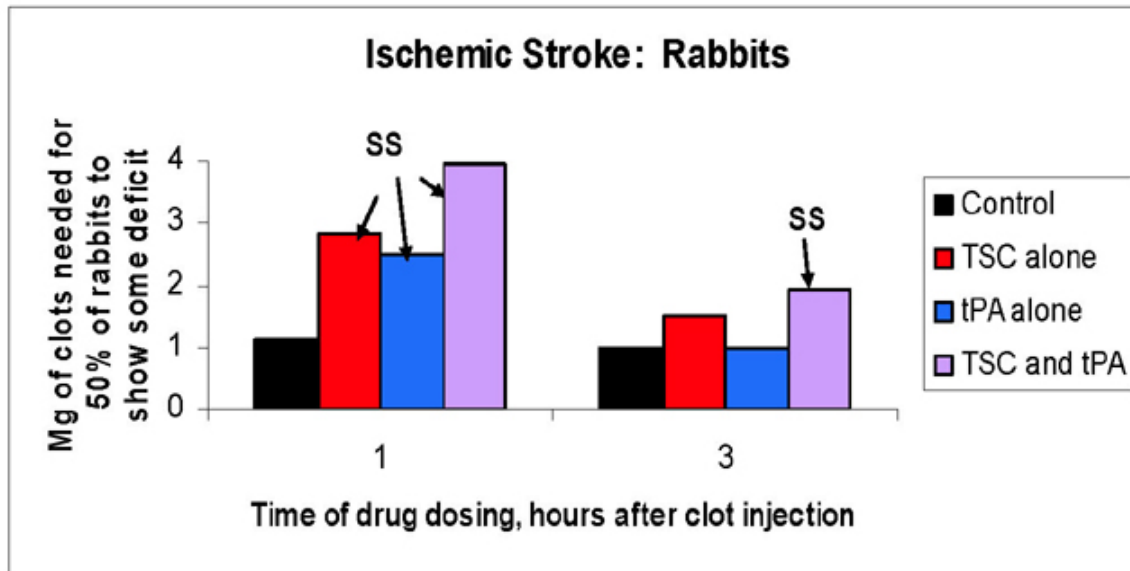
- Stroke and myocardial infarction
- Peripheral artery disease (PAD)
- Neurodegenerative diseases (such as Alzheimer's or Parkinson's) involving death of neurons
- Respiratory diseases, including COPD
- Emergency medicine, including hemorrhagic shock
- And others

Having a proven safety from our oncology clinical trials we can begin additional studies in Phase 2 for the above indications.

- Stroke is restricted blood flow to the brain, caused by a clot (ischemic) or a bleed (hemorrhagic).
- The resulting hypoxia drives the destruction of neurons, leading to impairment and death.
- tPA can only be use in ischemic stroke; can be fatal in hemorrhagic, delaying treatment time.
- TSC shows safety and efficacy in both ischemic and hemorrhagic stroke.
- Stroke clinical trial design being advised in co-operation with leading clinicians.



## TSC Shows Safety and Efficacy in Ischemic Stroke

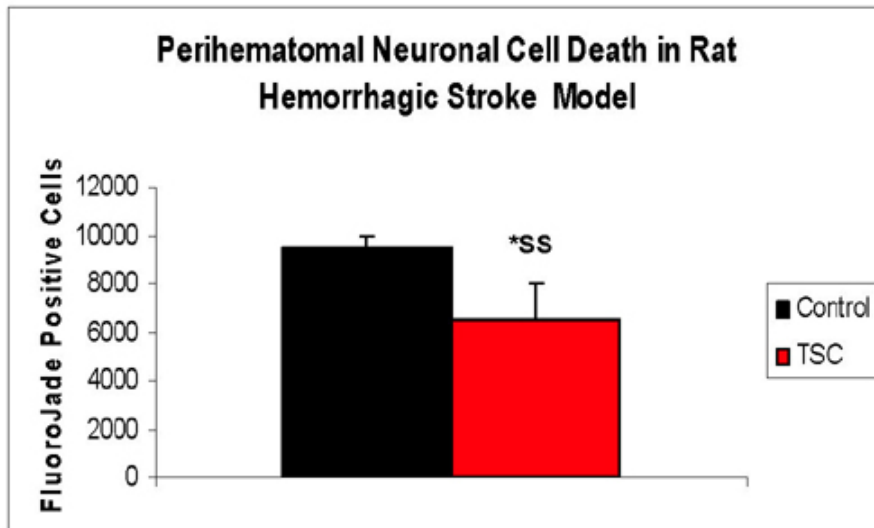


SS = statistical significance

Lapchak; *Brain Research*; Vol. 1309;pp 136-145; 2010

# TSC Shows Safety and Efficacy in Hemorrhagic Stroke

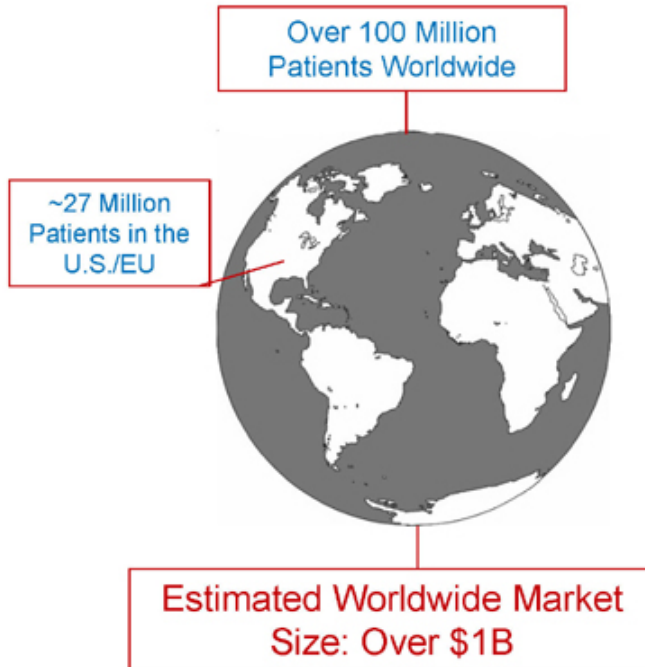
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*SS = statistical significance*



- Reduced blood flow limits oxygen reaching leg tissue
- Resulting hypoxia drives cascade of symptoms; pain, limited mobility, amputation, death
- Very limited treatment options; TSC provides a novel approach
- Successful Phase 2 study enhanced patient walking time, distance, and reduced time to pain onset
- *You clearly have a signal, and let me emphasize a strong signal, of clinically meaningful benefit...*  
William Hiatt, MD, Past Chair of the Vascular Disease Section, American Heart Association



# Diffusio<sub>2</sub>n

Pharmaceuticals Inc.

## Business Overview

- Issued and pending patents cover:
  - Composition of matter of drug product
  - Use of TSC for the treatment of cancer in combination with radiation and/or chemotherapy
  - Treatment of hypoxic conditions including stroke, heart attack, respiratory conditions and neurodegenerative diseases
- 14 patents issued in US & 46 issued abroad, including Asia
- Patents cover the major markets with key patent life until 2026, plus expected extensions until 2031
- Orphan Drug Designations seven-year exclusivity periods provide additional protection in the US
- Formulation patent provides protection for the TSC oral drug product until 2031, with possible extensions

**Company Funding – 1<sup>st</sup> Q 2017**

**Possible Partnering – 2017**

**400 Patient Glioblastoma Multiforme (GBM) Phase 3**

2017 – Study Start-up and Begin Treating Patients

2018-2019 – Complete Enrollment

2019 – Interim Data Readout (Potential)

2020 – Complete Study Conduct

Data collection, analysis and regulatory interaction will then occur over the following 12 to 18 months.

**160 Patient Pancreatic Cancer Phase 2**

2017 – Study Start-up and Begin Treating Patients (Part A)

2018 – Complete Part A; DSMB Review of Part A data;  
Begin Treating Part B

2019 – Complete Study Conduct

Data collection, analysis and regulatory interaction will occur over the following 9 to 12 months.

## Financial Overview

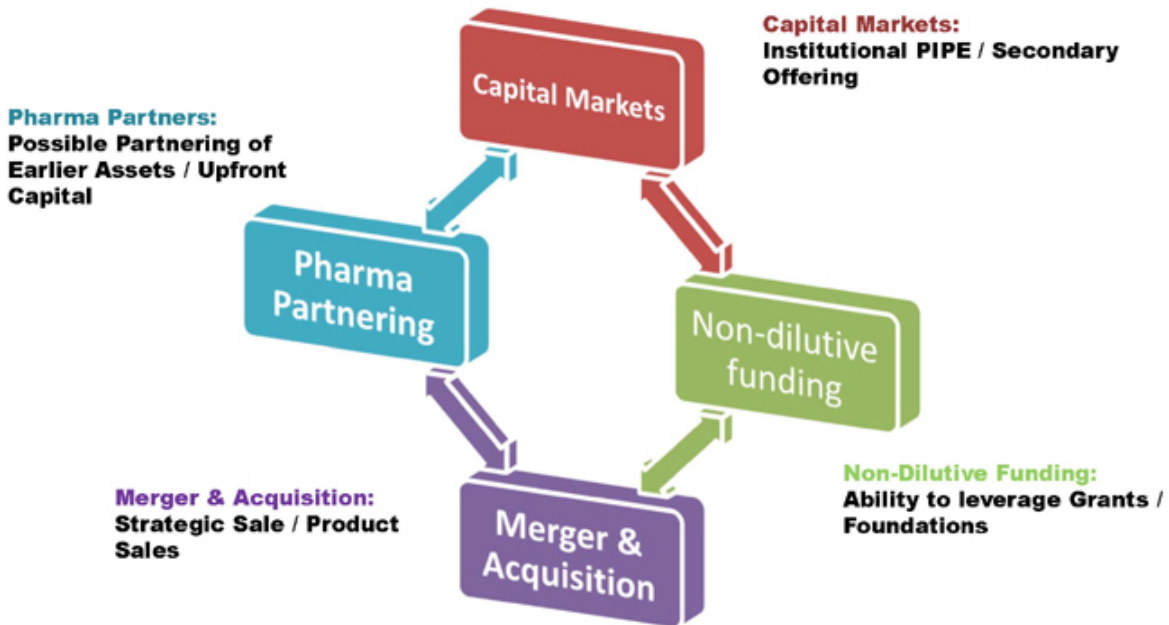
- Total capital invested to date: \$63 million
- Became a public entity effective 1/8/2016 through a merger with RestorGenex Corp
- Trades as Diffusion Pharmaceuticals Inc. (Ticker: NASDAQ DFFN)
- Financials – See Diffusion 10-Q for Quarter ended 9/30/2016 on the Company's website at [www.diffusionpharma.com](http://www.diffusionpharma.com)

# Recent Transactions and Landscape

At 1/26/17

Company	Status	Value	Notes
Calistoga Pharmaceuticals	Phase 2	\$600 Million	Acquired by Gilead
Celator	Phase 3 Read Out	\$1.5 Billion	Acquired by Jazz
Clovis Oncology	Phase 2/3	\$2.7 Billion Mkt Cap	Nasdaq: CLVS
Acerta	Phase 3	\$7 Billion	Acquired by AstraZeneca
Loxo Oncology	Phase 2	\$833 Million Mkt Cap	Nasdaq: LOXO
Aduro Biotech	Phase 2	\$747 Million Mkt Cap	Nasdaq: ADRO
OncoMed	Phase 2	\$291 Million Mkt Cap	Nasdaq: OMED

The transactions and valuations above are provided for information purposes only and should not be construed as indicative of expected results or performance of Diffusion Pharmaceuticals Inc.



## Combating Cellular Oxygen Deprivation to Treat Unmet Medical Needs

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**Diffusio<sub>2</sub>n**  
Pharmaceuticals Inc.

- First-in-class small molecules that safely re-oxygenate oxygen deprived (hypoxic) tissue by a novel mechanism; acts alone or with other treatments
- Multiple opportunities in unmet medical needs across \$ billion markets
- Initial oncology focus uses lead molecule TSC to enhance the efficacy of radiation and chemotherapy:
  - Glioblastoma brain cancer; Phase 2 successfully completed, Phase 3-ready design guided by FDA; Granted Orphan Drug Designation
  - Metastatic pancreatic cancer; Phase 2 program design guided by FDA and world experts
  - Metastatic brain cancer; Granted Orphan Drug Designation
- Other Phase 2-ready hypoxia-related follow-on indications, supported by compelling clinical and preclinical data:
  - Peripheral arterial disease; Phase 2 study successfully completed
  - Stroke, myocardial infarction and emergency medicine
  - Respiratory diseases, including COPD
  - Neurodegenerative diseases
- IP patent portfolio protection through 2031
- Experienced management, directors, advisors and key investors





# Diffusion<sub>2</sub>n

Pharmaceuticals Inc.

*Better Treatments for Cancer*

**David Kalergis, CEO**  
[dkalergis@diffusionpharma.com](mailto:dkalergis@diffusionpharma.com)

January 26, 2017  
[www.diffusionpharma.com](http://www.diffusionpharma.com)