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

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**FORM 8-K**

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**CURRENT REPORT  
PURSUANT TO SECTION 13 OR 15(d)  
OF THE SECURITIES EXCHANGE ACT OF 1934**

**Date of report (Date of earliest event reported): February 10, 2014**

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**ZIOPHARM Oncology, Inc.**  
(Exact Name of Registrant as Specified in Charter)

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**Delaware**  
(State or Other Jurisdiction  
of Incorporation)

**001-33038**  
(Commission  
File Number)

**84-1475672**  
(IRS Employer  
Identification No.)

**One First Avenue, Parris Building 34, Navy Yard Plaza**

**Boston, Massachusetts**  
(Address of Principal Executive Offices)

**02129**  
(Zip Code)

**(617) 259-1970**  
(Registrant's telephone number, including area code)

**Not applicable**  
(Former Name or Former Address, if Changed Since Last Report)

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Check the appropriate box below if the Form 8-K 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 8.01 Other Events**

On February 10, 2014, ZIOPHARM Oncology, Inc., or the Company, will present the attached discussion of the Company's synthetic-biology development strategy and milestones at the 16th Annual BIO CEO & Investor Conference in New York, New York.

A copy of the above referenced presentation is filed as Exhibit 99.1 to this Current Report on Form 8-K.

**Item 9.01 Financial Statements and Exhibits**

(d) Exhibits

<u>Exhibit No.</u>	<u>Description</u>
99.1	Presentation of the Company dated February 10, 2014

SIGNATURES

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

ZIOPHARM Oncology, Inc.

By: /s/ Kevin G. Lafond

Name: Kevin G. Lafond

Title: Vice President Finance, Chief Accounting Officer and Treasurer

Date: February 10, 2014

**INDEX OF EXHIBITS**

**Exhibit  
No.**

**Description**

99.1 Presentation of the Company dated February 10, 2014



# **ZIOPHARM Oncology**

The Future of Cancer Therapy

BIO CEO & Investor Conference  
February 2014

[www.ziopharm.com](http://www.ziopharm.com)



# Forward-Looking Statements

This presentation contains certain **forward-looking information about ZIOPHARM Oncology** that is intended to be covered by the safe harbor for "forward-looking statements" provided by the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are statements that are not historical facts. Words such as "expect(s)," "feel(s)," "believe(s)," "will," "may," "anticipate(s)" and similar expressions are intended to identify forward-looking statements. These statements include, but are not limited to, statements regarding our ability to successfully develop and commercialize our therapeutic products, our ability to expand our long-term business opportunities; financial projections and estimates and their underlying assumptions; and future performance. All of such statements are subject to certain risks and uncertainties, many of which are difficult to predict and generally beyond the control of the Company, that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include, but are not limited to: whether any of our therapeutic candidates will advance further in the clinical trials process and whether and when, if at all, they will receive final approval from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies and for which indications; whether any of our therapeutic candidates will be successfully marketed if approved; whether our DNA-based biotherapeutics discovery and development efforts will be successful; our ability to achieve the results contemplated by our collaboration agreements; the strength and enforceability of our intellectual property rights; competition from pharmaceutical and biotechnology companies; the development of and our ability to take advantage of the market for DNA-based biotherapeutics; our ability to raise additional capital to fund our operations on terms acceptable to us; general economic conditions; and the other risk factors contained in our periodic and interim reports filed with the SEC including, but not limited to, our annual report on Form 10-K for the fiscal year ended December 31, 2012, and our quarterly report on Form 10-Q for the fiscal quarter ended September 30, 2013. Our audience is cautioned not to place undue reliance on these forward-looking statements that speak only as of the date hereof, and we do not undertake any obligation to revise and disseminate forward-looking statements to reflect events or circumstances after the date hereof, or to reflect the occurrence of or non-occurrence of any events.





- Clinical-stage **cancer immunotherapy** company
- Focus on treatment through **DNA expression and control**
- **Phase 1/2 program** targeting melanoma, breast cancer and glioma
- Intrexon partnership enabling **potential paradigm shift**
- **New INDs** through 2015 exploring **multigenic approach** to cancer treatment



## Why Focus on DNA-Based Medicine?

DNA synthesis and delivery enable:

- creation of **new therapies** which target cancer cells
- **precise control** of biologic concentration and dosing
- **better therapeutic index** through controlled protein delivery and cellular targeting
- **economically feasible approach** to combination biologic therapies







## Intrexon Collaboration: Leveraging Our Assets

- ZIOP: translational medicine and oncology drug development
- XON: synthetic biology platform enabling DNA delivery and control
- Exclusive channel partner agreement in all human cancer:
  - ZIOP responsible for product development and commercialization
  - XON responsible for manufacturing, process-improvement R&D, patents
  - 50:50 revenue/net-profit split
- Current targets: melanoma, breast cancer, glioma, other cancers

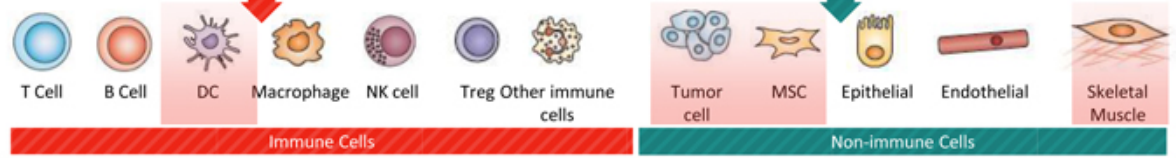


# We Have the Tools to Treat Cancer Better

## Effectors



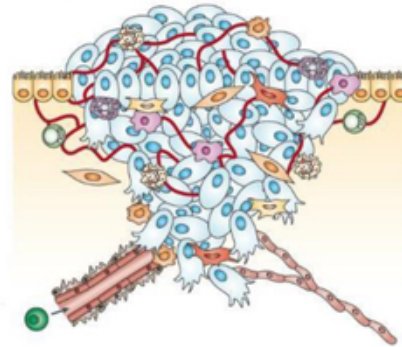
## Cells



## Anti-tumor function



## Tumor and microenvironment



# The Power of Intrexon's RheoSwitch® Technology

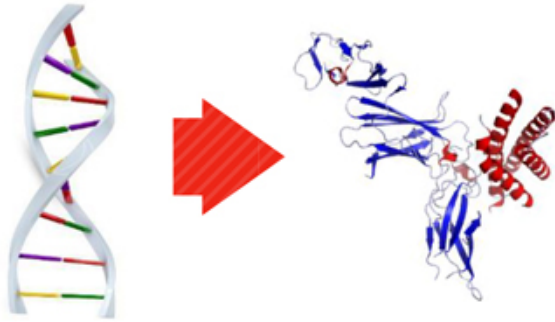


ZIOPHARM Oncology

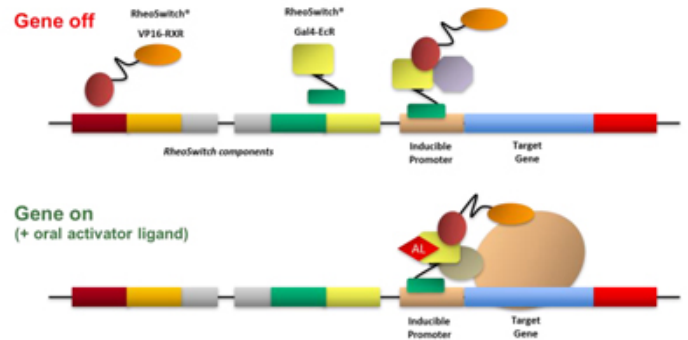
## Controlled Expression and Delivery of Therapeutic Proteins with RheoSwitch®:

This is the most advanced clinical method to turn genes on and off

### Gene Expression



### RheoSwitch®



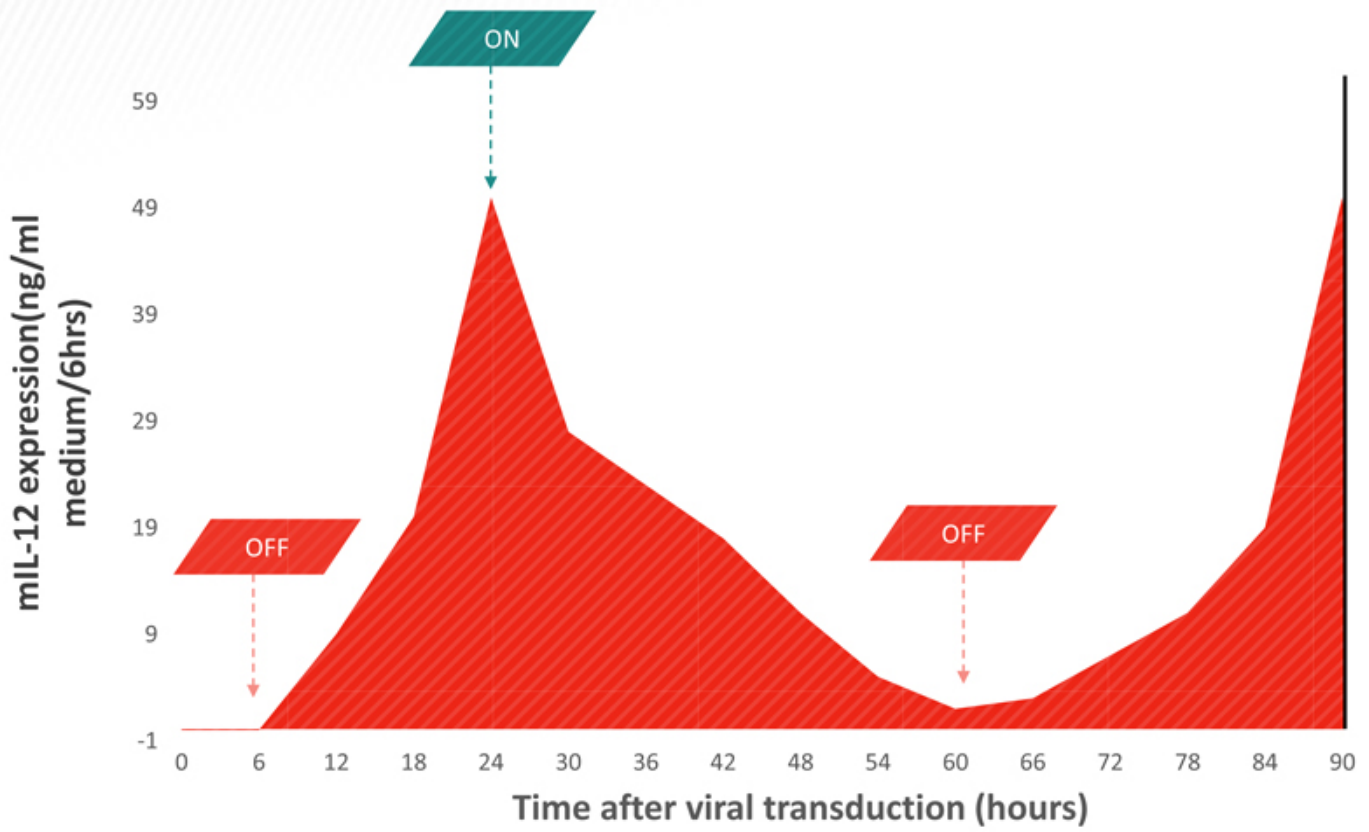
- ⊖ High Potency
- ⊖ Monogenic/Multigenic

- ⊖ Dose-control
- ⊖ Orally activated biologic on/off switch

# IL-12 Production is Modulated by Veledimex (Activator Ligand) in HT 1080 Cells



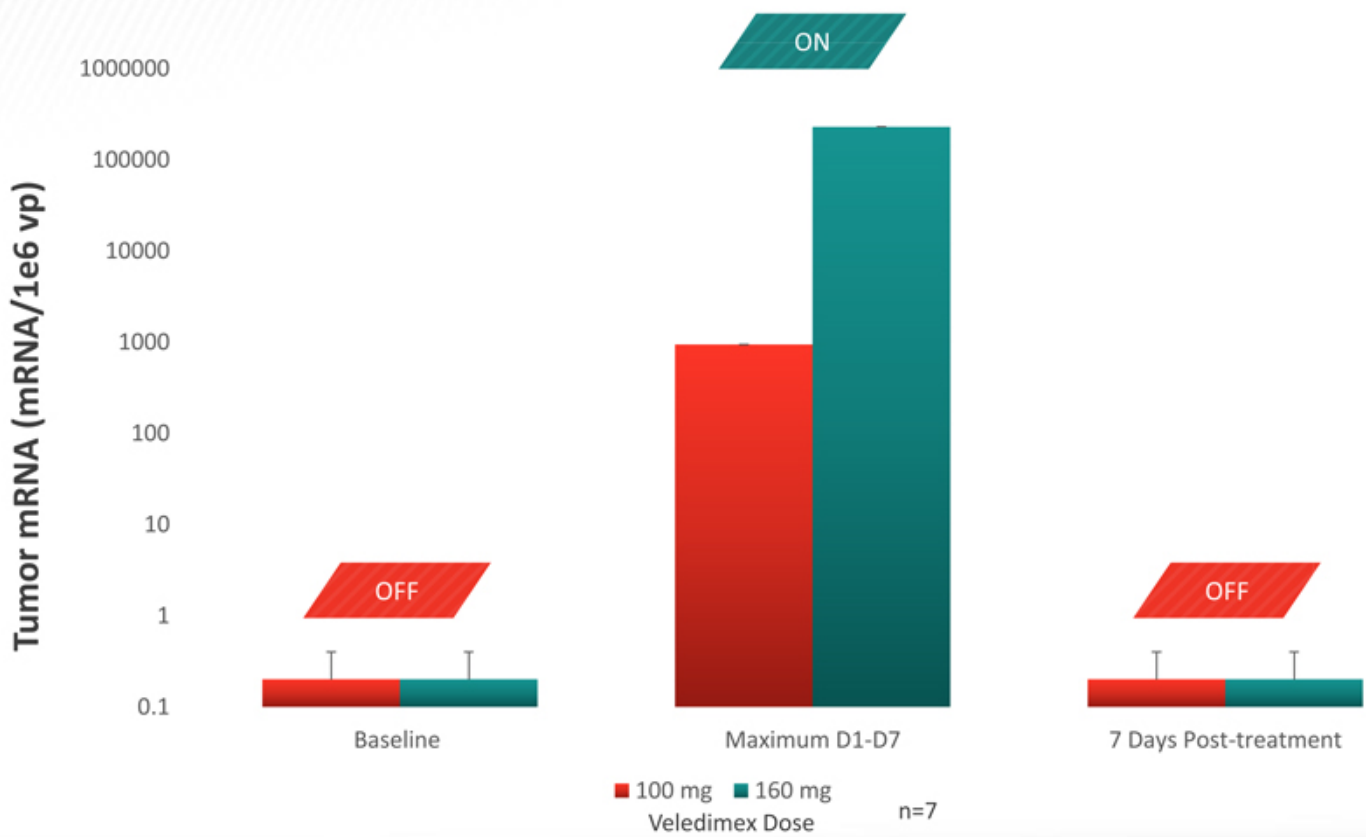
ZIOPHARM Oncology



# Veledimex Tightly and Precisely Controls the Expression of IL-12 $\beta$ mRNA in the Tumor



ZIOPHARM Oncology





# Cytotoxic T Cells & Memory T Cells (TILs) Significantly Increase in Tumors Following Ad-RTS-IL-12 Treatment

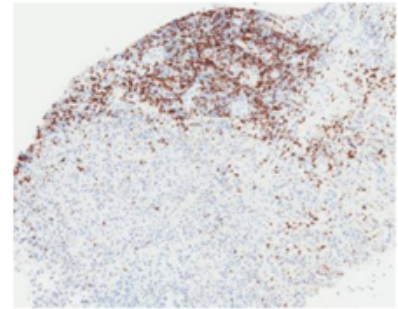
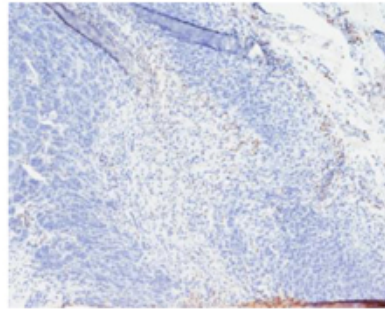


ZIOPHARM Oncology

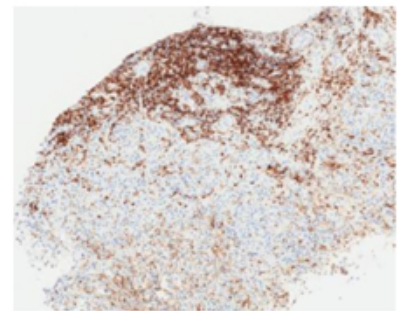
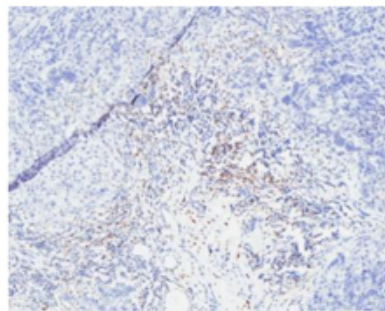
Off

On

CD8+



CD45RO+



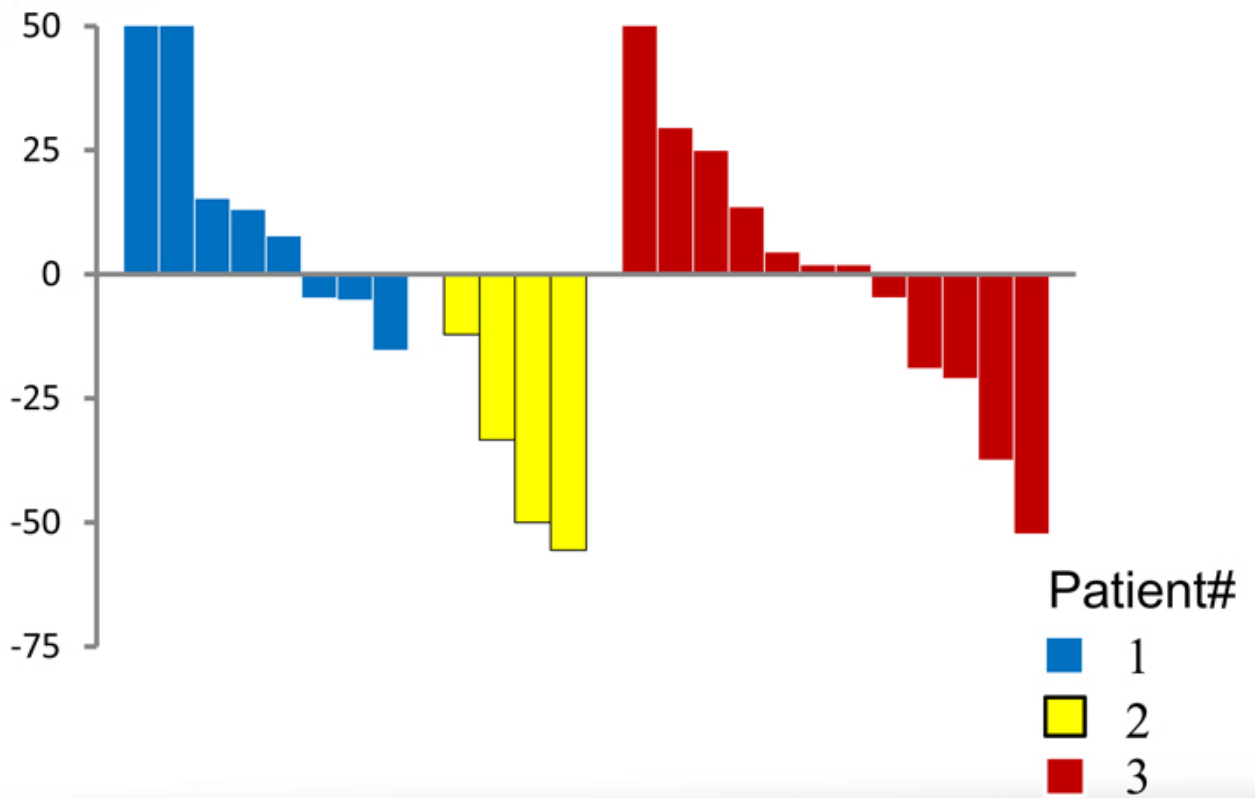
Images were obtained using an Aperio ScanScope XT whole-slide imager and digitized at 20x.

# Systemic Immune Activity: patterns of anti-tumor response



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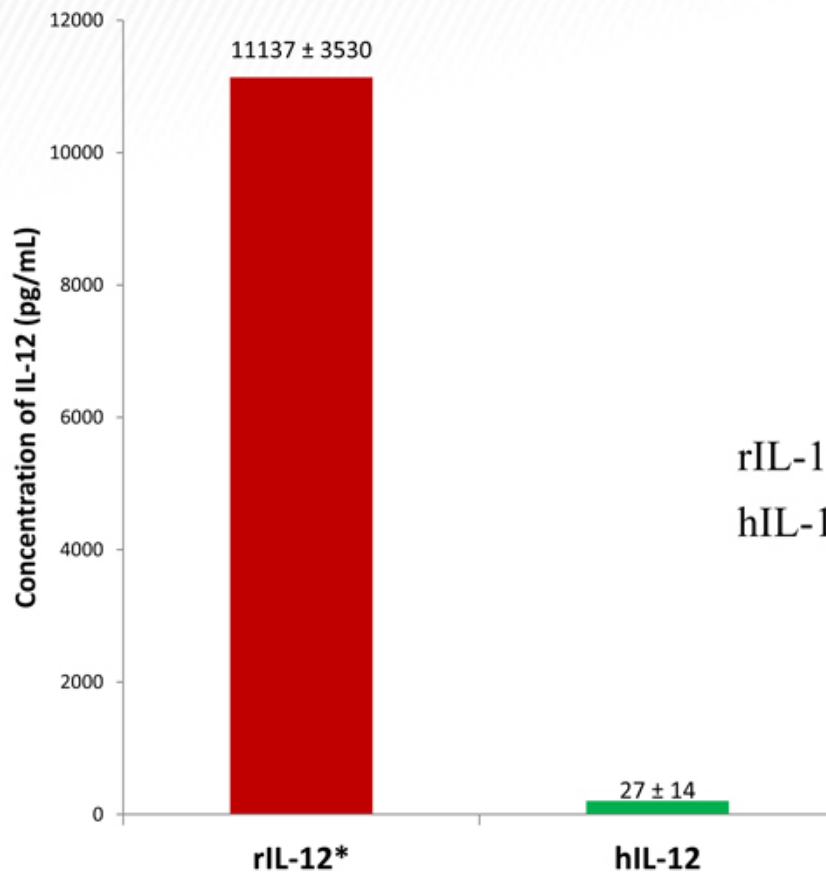
%Change from baseline lesion size



# Peak Serum IL-12 Concentration



ZIOPHARM Oncology



rIL-12 = recombinant IL-12

hIL-12 = Ad RTS IL-12

\*Atkins, MB et al *Clin Cancer Res* 1997;3:409-417





## Clinical Observations to Date

### **We can control gene expression to achieve a desirable immune response**

- ⊖ High expression of IL-12 mRNA in tumors, tightly controlled by veledimex dose
- ⊖ Increased tumor infiltrating lymphocytes observed in the tumor microenvironment, suggesting multiple favorable biologic effects of IL-12 expression

### **We have seen potent systemic biologic activity and reversible toxicity**

- ⊖ Melanoma: potent biologic activity in injected and non-injected lesions
- ⊖ Breast: on-mechanism and on-target toxicity demonstrates powerful immune response controlled by dose-dependent expression of IL-12
- ⊖ Adverse events consistent with immunotherapy use and immune response; serious adverse events reversed after veledimex dosing stopped

*“This opens the possibility that, for the first time, we can achieve personalized scheduling as a component of personalized cancer medicine.”*

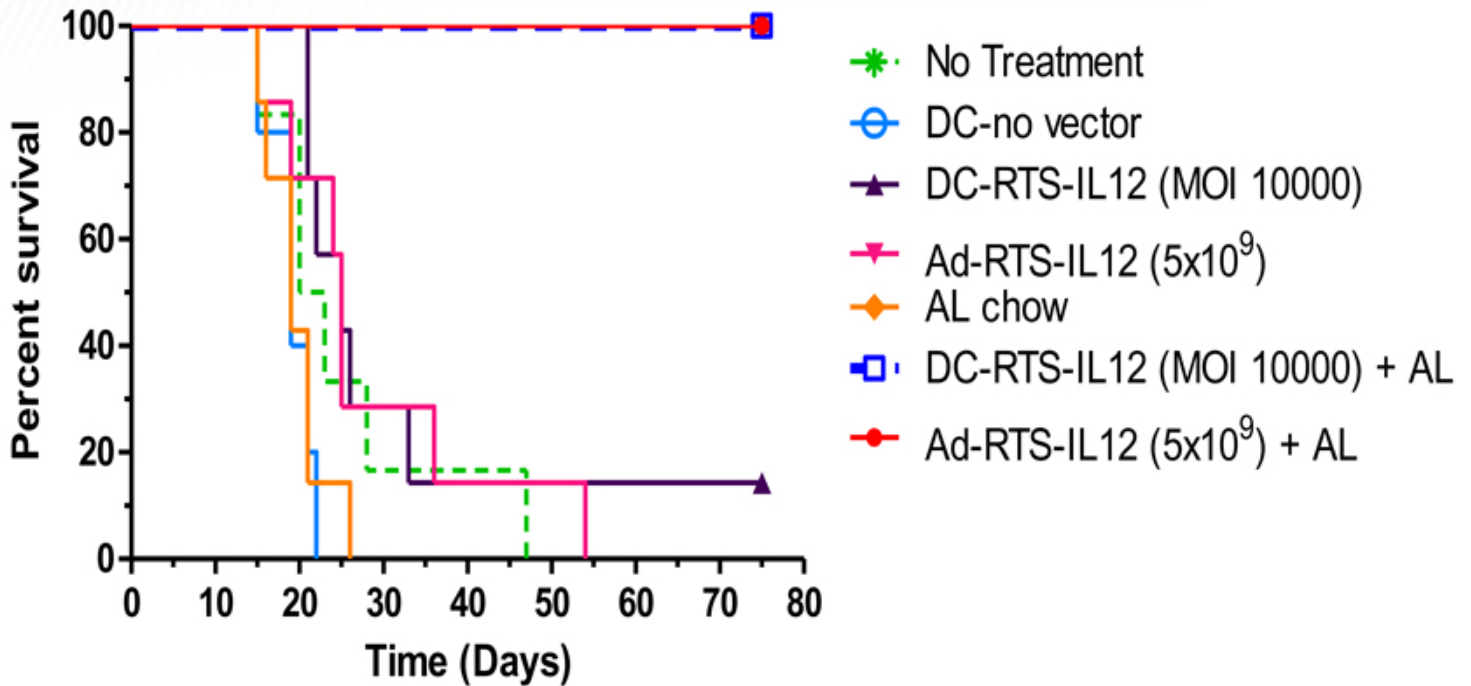
*Larry Norton, M.D., Deputy Physician-in-Chief for Breast Cancer Programs, Memorial Sloan-Kettering Cancer Center*

# Glioblastoma Multiforme: IL-12 Preclinical Activity



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Kaplan Meier Survival in GL261 Orthotopic Syngeneic Mouse Glioma Model



Veledimex (AL) dosing Day 4 to EOS at  $\sim 675$  mg/m<sup>2</sup>/day in chow; DC-RTS-IL-12 or Ad-RTS-IL-12 on Day 5  
100% survival observed with Ad-RTS-IL-12 + AL or DC-RTS-IL-12 + veledimex

# Significant Market Potential for Ad-RTS-IL-12



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## Incidence

Breast Cancer  
234,580



Glioma  
18,000

Melanoma  
76,690



# IL-12 Program Plans

## Melanoma Phase 2

combination study with SOC

FPI 1H 2014

Preliminary data YE 2014

## Breast Cancer Phase 2

combination study with SOC

FPI 1H 2014

Preliminary data 1H 2015

## GBM Phase 1

dose-escalation study

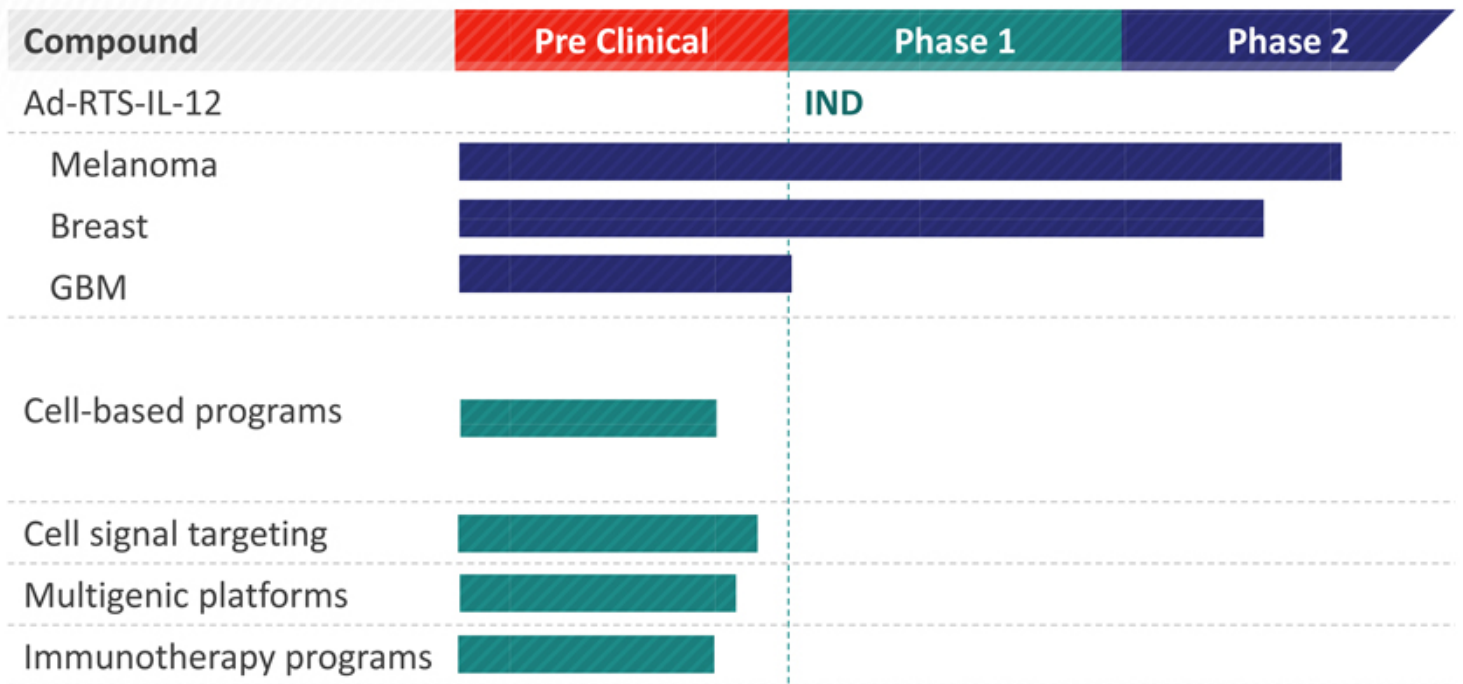
FPI 1H 2014

Preliminary data YE 2014





# A Growing Oncology Portfolio





## Potential DNA Combination Therapies: Future INDs

- Human mesenchymal stem cells genetically modified with genes that program the body to destroy cancer
- Multigenic therapeutic antibodies such as single chain versions of Herceptin® and Erbitux®
- Embedded cellular bioreactors to deliver multiple proteins systemically using RheoSwitch® platform







## Upcoming Milestones

Program	Milestone	Timing
IL-12	Phase 2 breast cancer study data	2014
	Phase 2 advanced melanoma study data	2014
	Initiate Phase 1/2 glioblastoma multiforme study	1H 2014
	Initiate Phase 2 melanoma combo study	1H 2014
	Initiate Phase 2 breast cancer combo study	1H 2014
New Indications	Report discovery and preclinical data	2014
	Submit INDs for monogenic/multigenic studies	2H 2014 and beyond
Publications and Presentations	Across programs	2014
Corporate	Partnering opportunities	Ongoing



## Financial Highlights

Approx. **100 million shares outstanding** (pro forma)

Approx. **\$77.4 million in cash and investments** (pro forma)

No debt

Development partner/top shareholder:

 Intrexon Corp. (NYSE: XON)







## ZIOPHARM Oncology

- Phase 2 program advancing in breast cancer and melanoma
- Glioblastoma results due in 2014
- Preparing INDs for new studies in 2014 and 2015
- Exploring multigenic combination therapies to improve standards of care





# **ZIOPHARM Oncology**

The Future of Cancer Therapy

NASDAQ: ZIOP

[www.ziopharm.com](http://www.ziopharm.com)