NORTHWEST BIOTHERAPEUTICS

DCVax® Novel Personalized Immunotherapies for Solid Tumors

Phaciliate Immunotherapy World Forum

January 26, 2016

NORTHWEST BIOTHERAPEUTICS

Disclaimer

Certain statements made in this presentation are “forward-looking statements” of NW Bio as defined by the Securities and Exchange Commission (“SEC”). All statements, other than statements of historical fact, included in this presentation that address activities, events or developments that NW Bio believes or anticipates will or may occur in the future are forward-looking statements. These statements are based on certain assumptions made based on experience, expected future developments and other factors NW Bio believes are appropriate in the circumstances. Such statements are subject to a number of assumptions, risks and uncertainties, many of which are beyond the control of NW Bio. Investors and others are cautioned that any such statements are not guarantees of future performance. These forward-looking statements could cause actual results and developments to differ materially from those expressed or implied in such statements, including our ability to raise funds for general corporate purposes and operations, including our clinical trials, the commercial feasibility and success of our technology, our ability to recruit qualified management and technical personnel, our ability to scale up the manufacturing of our product candidates for commercialization, the success of our clinical trials and our ability to obtain and maintain required regulatory approvals for our products. Furthermore, NW Bio does not intend (and is not obligated) to update publicly any forward-looking statements. The contents of this presentation should be considered in conjunction with the risk factors contained in NW Bio’s recent filings with the SEC, including its most recent Form 10K. This communication is neither an offer to sell nor a solicitation of an offer to buy any securities mentioned herein. This publication is confidential for the information of the addressee only and may not be reproduced in whole or in part; copies circulated, or disclosed to another party, without the prior written consent of Northwest Biotherapeutics (NW Bio) are strictly prohibited.

Novel DCVax® Technology: Overview

DCVax®: Personalized DCs + personalized and full set of tumor antigens

- Avoids "Russian Roulette" and impedes tumor escape

Encouraging results to date, expanding the reach of immunotherapies

- **Long tail of durable clinical responses**
- **Excellent safety profile**

Novel Technology Aspects

- **Robust cytokine secretion without material toxicity**
  cytotoxic effects in tumors; modulation of tumor micro-environment
- **Mobilization of T cell responses**: large multiplier effect; quantity & diversity
- **Expression of PD-L1**: potential synergy with checkpoint inhibitors

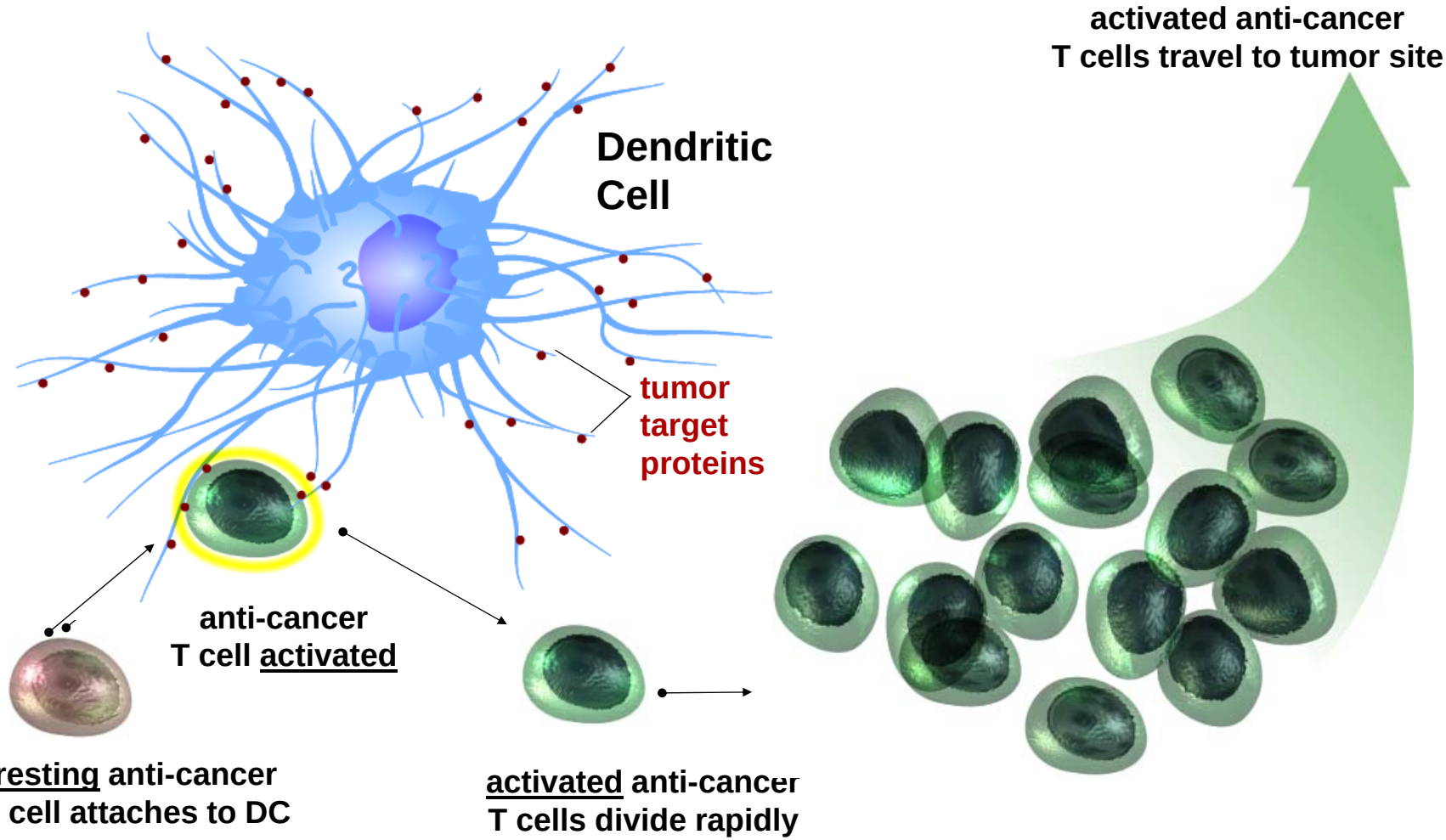
NORTHWEST BIOTHERAPEUTICS

DCVax Potentially Applicable to All Types of Solid Tumors

Market	Product / Administration	Composition	Lead Program
All **Operable** Solid Tumors	**DCVax®-L** Intra-dermal shot in arm	Dendritic cells + full set of tumor antigens from tumor tissue sample surgically removed	Brain cancer *348-patient Phase III trial underway* Small ovarian cancer Phase I/II trial completed
All **Inoperable** Solid Tumors	**DCVax®-Direct** Direct injection into tumor	Dendritic cells directly injected into tumor(s) + full set of tumor antigens picked up in situ in tumor	All solid tumor cancers (13 cancers treated to date) *60-patient Phase I/II trial under way*

NORTHWEST BIOTHERAPEUTICS

Large Multiplier: Each Dendritic Cell Activates Hundreds of Anti-Cancer T Cells



NORTHWEST BIOTHERAPEUTICS

DCVax Potential to Expand the Reach of Immunotherapy

Clinical trials/treatments of nearly 20 diverse types of cancers including:

newly diagnosed disease

- DCVax-L for newly diagnosed GBM, with SOC (Phase III trial)

late stage, heavy tumor burdens

- DCVax-L for late stage, metastatic ovarian cancer
- DCVax-L for "rapid progressor" GBM
- DCVax-Direct for inoperable metastatic tumors (13 types of cancer)
- DCVax-Direct for very large tumors (10 cm. lung; 15x19x17 cm. sarcoma)

lower grade cancers

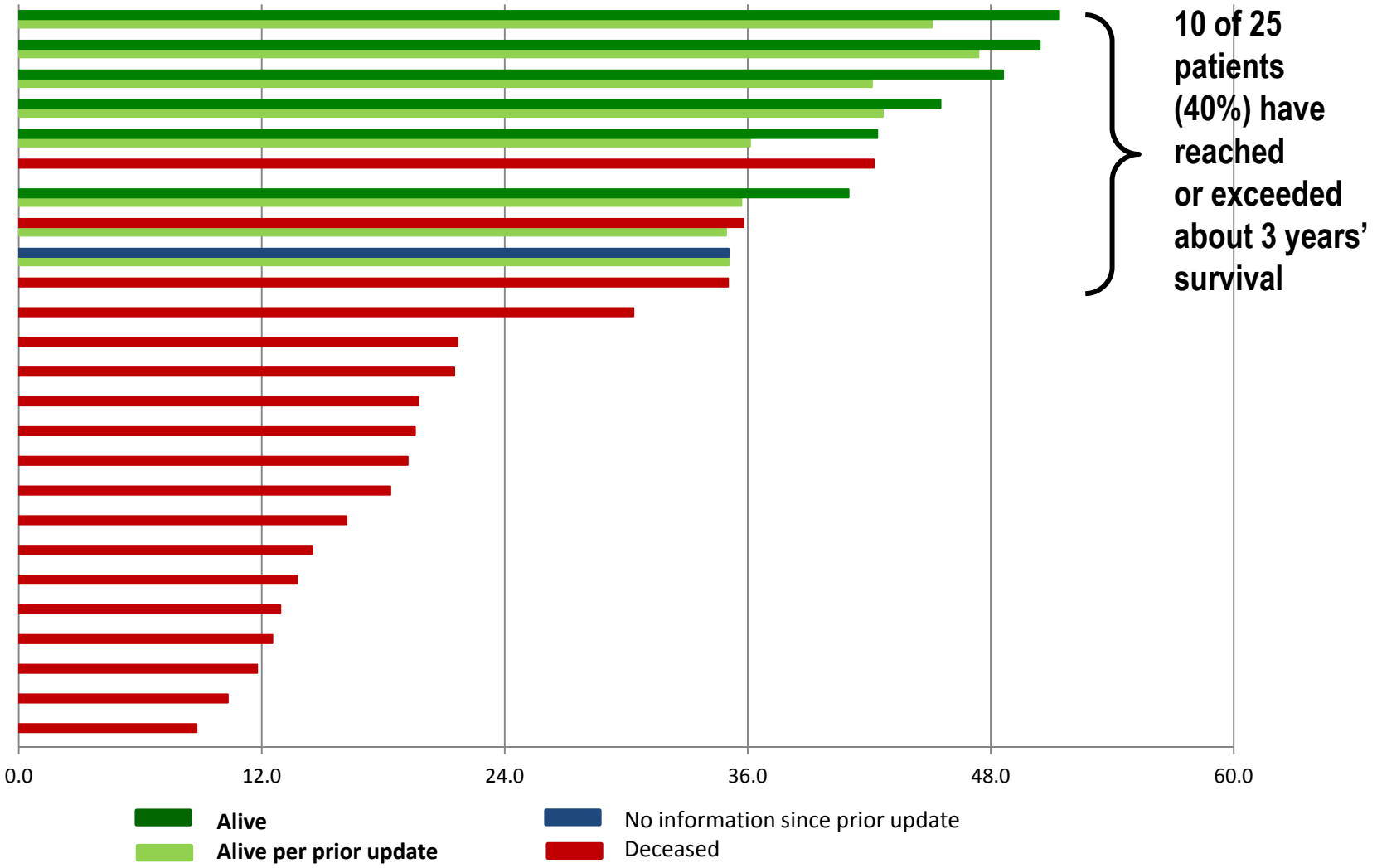
- DCVax-L for all grades of gliomas, with SOC (Hosp. Exemp., Germany)

higher grade cancers

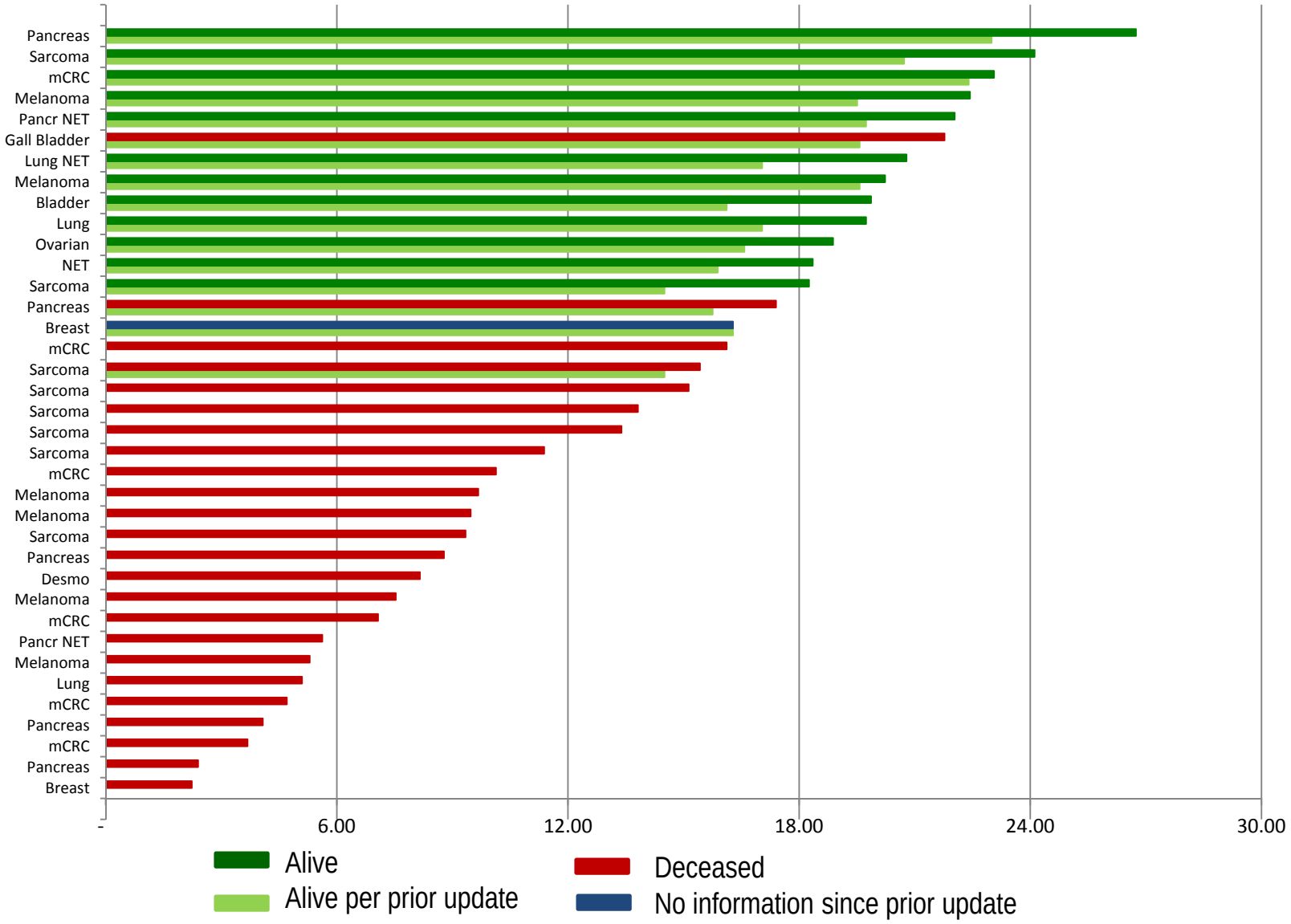
- DCVax-L for high-grade/GBM (Phase III trial)

NORTHWEST BIOTHERAPEUTICS

Long Tail of Durable Responses: DCVax-L Info Arm Study of Apparent Rapid Progressor (Recurrent) GBM Patients



Long Tail of Durable Responses:
DCVax-Direct Phase I Trial; 13 Cancers



Excellent Safety Profile

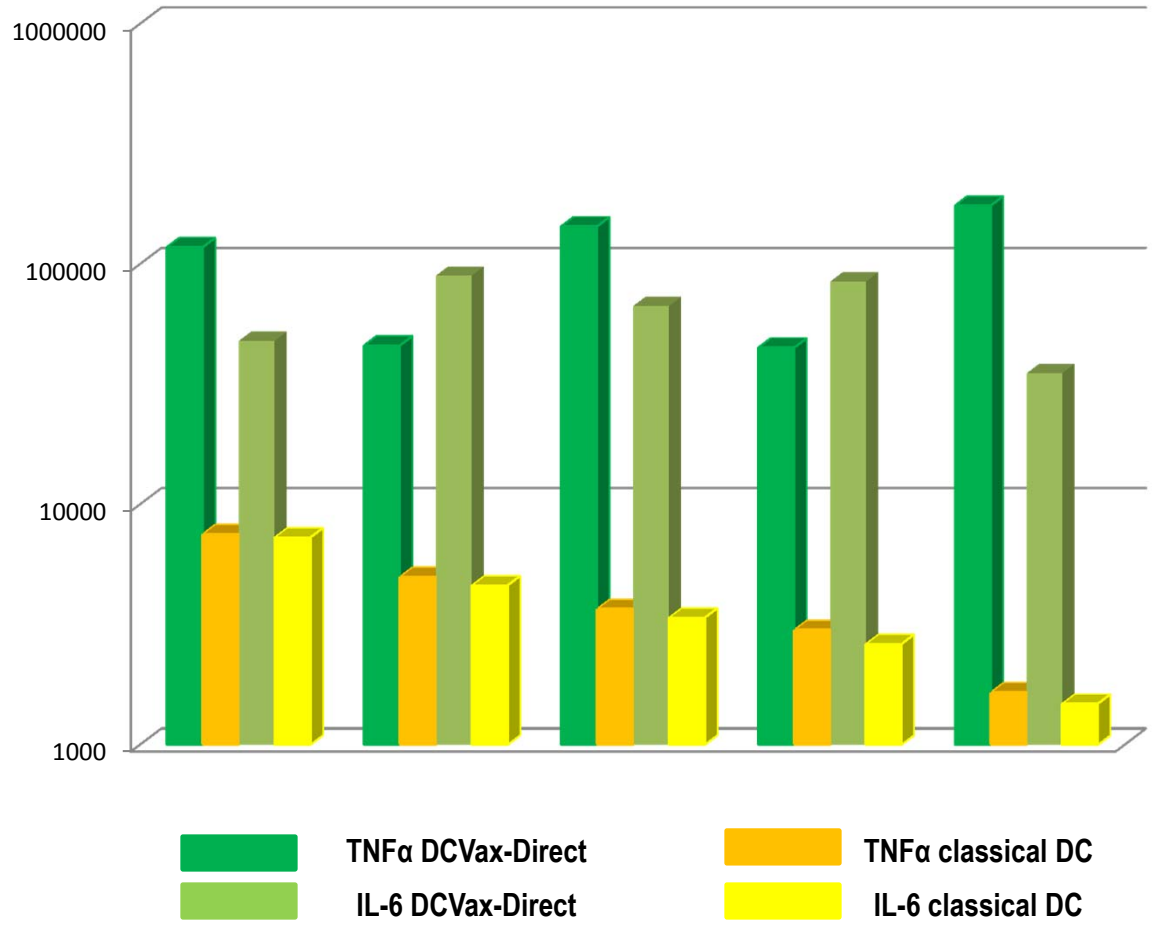
DCVax-L:

- **Over 400 patients treated, with over 2,800 treatment cycles: only 7 "possibly or probably related" SAEs**
- **Generally, AEs are related to underlying disease or other treatments** (e.g., temozolamide)**.**

DCVax-Direct:

- **40 patients treated, with over 140 treatment cycles: only 3 "related" SAEs**
- **Generally, Grade 1 and occasionally Grade 2 fevers related to treatment**

Robust Cytokine Secretion

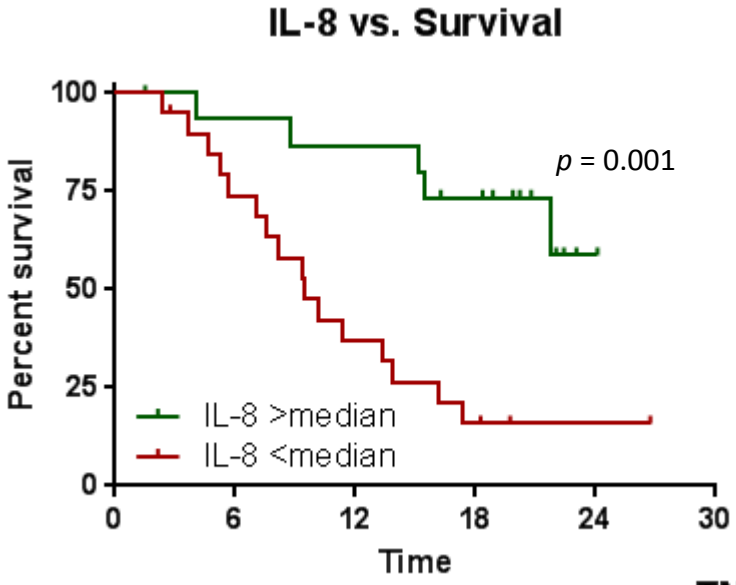


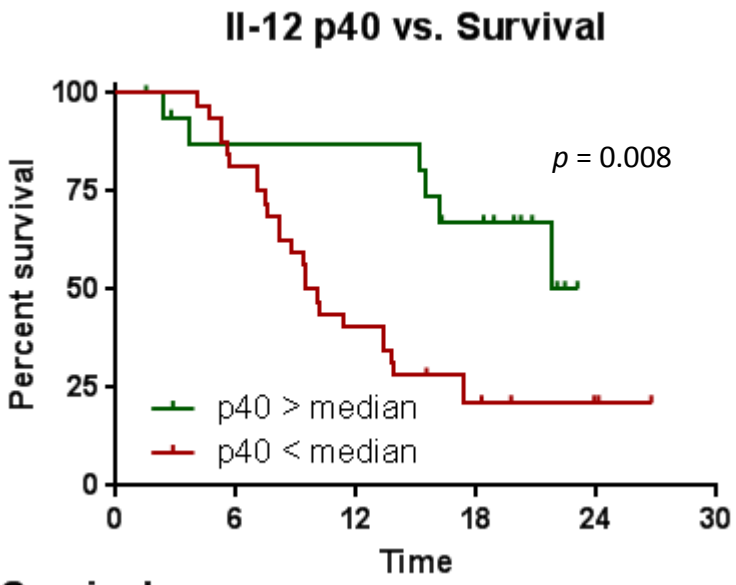
Greater Cytokine Secretion May Help Improve Outcomes

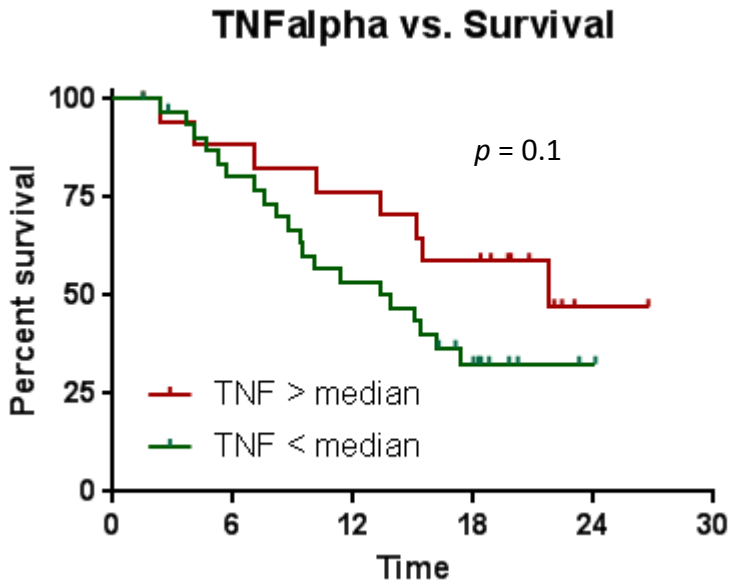
- Cytokine secretion while product still in manufacturing process
- A measure of dendritic cell potency/functionality
- A potential indicator of patient's immune competence
- A potential indicator of whether patient is more likely or less likely to respond to immunotherapies
- Cytotoxic effects, tumor necrosis
- Correlation with improved survival

NORTHWEST BIOTHERAPEUTICS

Greater Cytokine Production Correlates With Survival

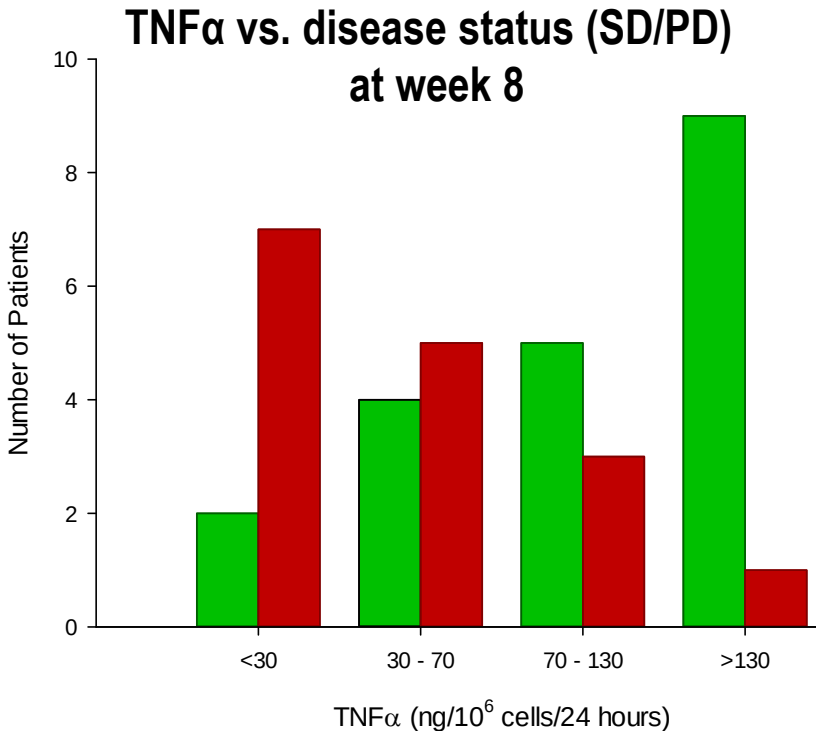


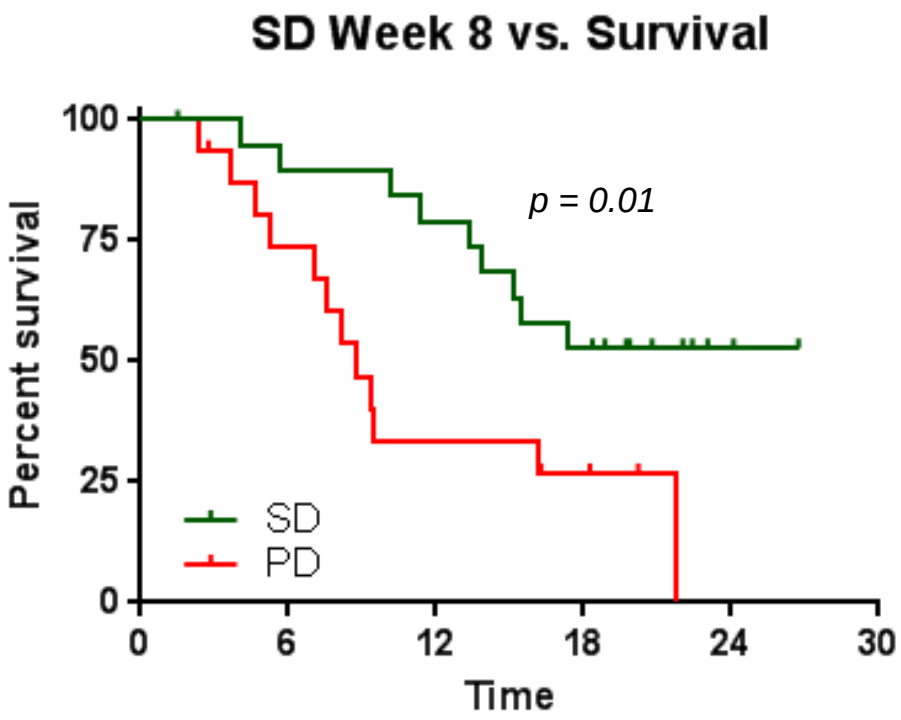




3 outliers (based on cytokine production profile) removed prior to analyses

Cytokines Correlate with Stable vs. Progressive Disease And Stable Disease Correlates With Survival





Mobilizing T Cell Responses

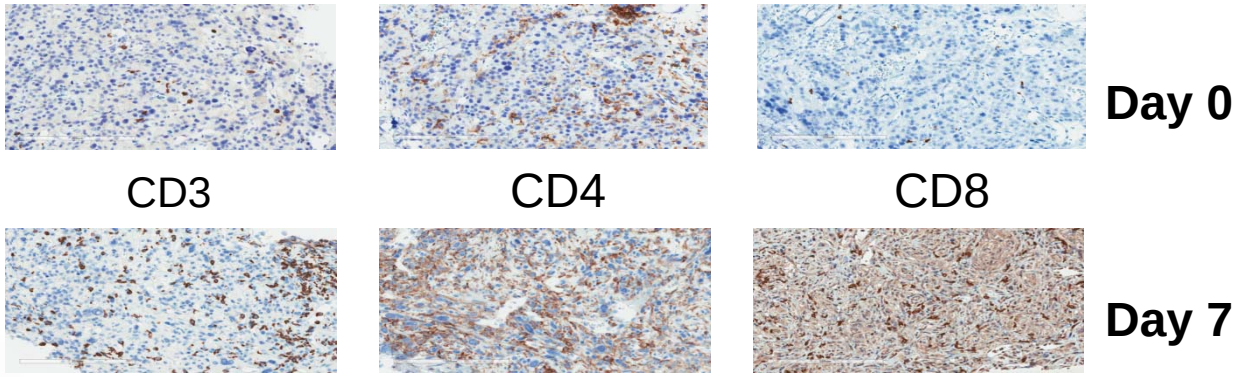
Overall, both CD4+ helper T cells and CD8+ killer T cells increased materially from baseline in at least 20 of 28 assessed patients (71%) in DCVax-Direct Phase 1.

Early Effects:

In some patients, influx of T cells into tumor was apparent within days of first DCVax-Direct administration, suggesting:

- A pre-existing immune response which was being blocked in the TME
- A modulation of TME and rapid breakdown of tumor defensive barriers

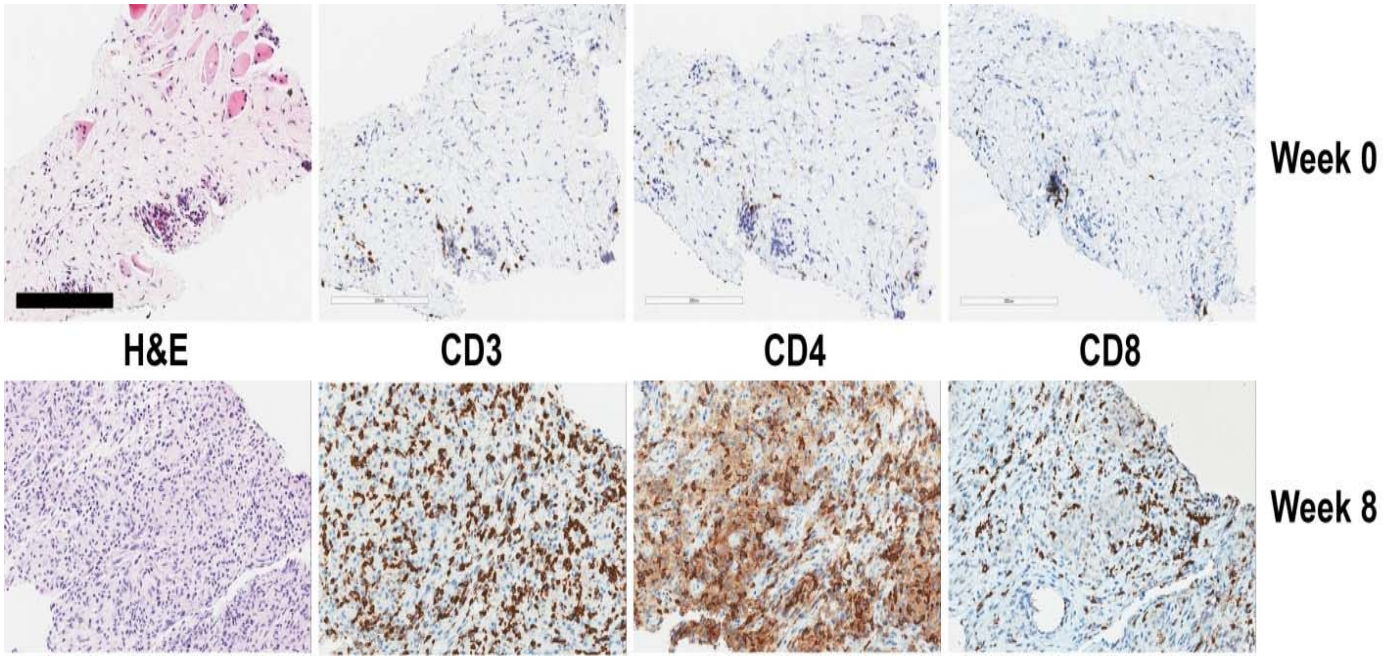
Example: clear cell sarcoma



NORTHWEST BIOTHERAPEUTICS

Mobilizing T Cell Responses: Longer Timeframe, De Novo Responses

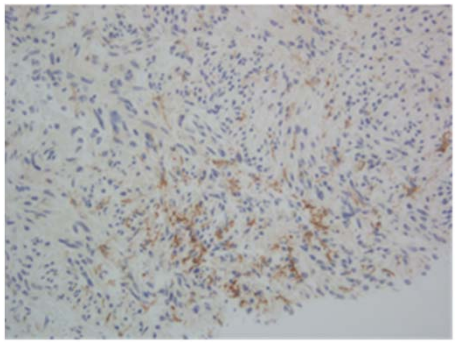
- Observed more frequently than early effects of T cell responses
- Wide range of CD4 and CD8 T cell ratios observed
- Preliminary analysis suggests full T cell functionality



NORTHWEST BIOTHERAPEUTICS

Induction of Checkpoint Expression (PD-L1)

- **20 of 25 evaluable patients (80%) in DCVax-Direct Phase I trial, showed either *de novo* or significantly increased expression of PD-L1 following DCVax-Direct treatment**
- **Patient to patient variation in timing of when PD-L1 expression appears**



De novo PDL-1 staining on sarcoma tissue, 8 weeks after initiation of DCVax-Direct treatment

- **At least in some types of cancers, PD-L1 expression is correlated with (and may predict) patient responsiveness to checkpoint inhibitors**

(e.g., gastric cancers)

NORTHWEST BIOTHERAPEUTICS

Conclusions

- DCVax products are capable of inducing immune responses in a wide variety of cancers and wide range of patients
- DCVax product potency appears likely to predict for clinical outcome (to be substantiated in further trials)
- Patients treated with DCVax-Direct exhibit both de novo or increased T cell responses and de novo or increased PD-L1 expression
- DCVax-Direct may help increase percentage of patients responding to checkpoint inhibitors
- Early identification of patients likely to respond can increase chances of success