Genitope Corporation

Summary of MyVax Personalized Immunotherapy Phase 3 Clinical Trial Results

Introduction

In December 2007, Genitope Corporation ("Genitope") obtained data indicating that its pivotal Phase 3 clinical trial examining the use of MyVax personalized immunotherapy ("MyVax") in previously untreated follicular B-cell non-Hodgkin's lymphoma ("fNHL") patients did not meet its primary endpoint. In the primary analysis, there was no statistically significant difference in the progression-free survival ("PFS") of patients receiving MyVax compared to patients receiving the control immunotherapy. However, analysis of a pre-specified endpoint in the group of patients receiving MyVax showed a highly statistically significant difference in PFS between patients who mounted a positive immune response to the tumor-specific target and those who did not.

In early March 2008, Genitope met with the U.S. Food and Drug Administration ("FDA") to discuss a potential regulatory path forward for MyVax. During this meeting, FDA communicated to Genitope that, in light of the Phase 3 clinical trial's failure to meet its primary endpoint, one or more additional Phase 3 clinical trials for MyVax would be required before FDA would accept a Biologics License Application ("BLA") for FDA review.

Genitope has concluded that it is not financially feasible for Genitope to conduct additional Phase 3 clinical trials prior to receipt of FDA approval for MyVax and, accordingly, has suspended its development of MyVax. Genitope's financial circumstances make it highly unlikely that Genitope will be able to continue development of MyVax.

Genitope is extremely disappointed in the FDA's decision and deeply saddened that it will not be able to provide MyVax personalized immunotherapy to fNHL patients in the United States.

Clinical Background

Active idiotype immunotherapy, also referred to as "idiotype vaccine," was originally developed at Stanford University Medical Center ("SUMC") by Dr. Ronald Levy. Dr. Levy's first clinical trial for active idiotype immunotherapy began in 1988 and involved 41 patients with fNHL. In this clinical trial, positive immune responses to a patient-specific active idiotype immunotherapy were detected in 20 of the 41 immunized patients. The median time-to-disease progression was calculated to be 7.9 years for the 20 patients who mounted an anti-idiotype immune response ("IR+") and 1.3 years for the 21 patients who did not mount an anti-idiotype immune response ("IR-"). Long-term results from this clinical trial were published in the medical journal, *Blood*, in May 1997.

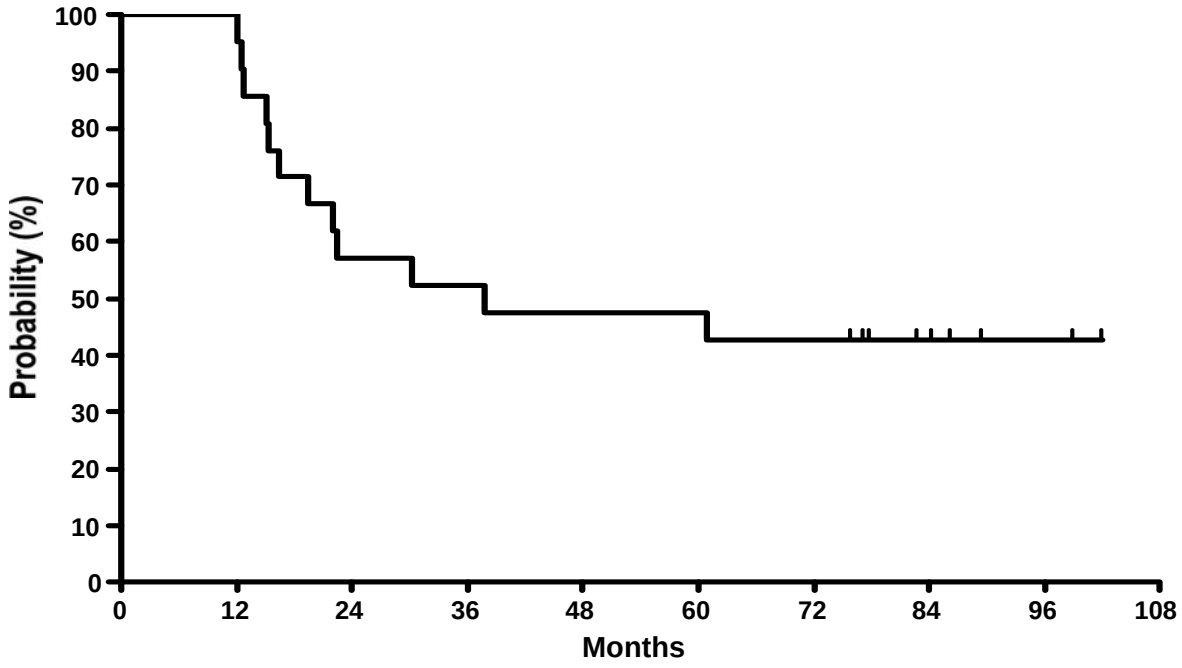
Dr. Levy presented an update of data on a total of 91 patients treated with active idiotype immunotherapy in clinical trials at SUMC at the American Society of Hematology annual meeting in December 2007. At this meeting, Dr. Levy presented an overall survival rate of immunized patients of 78% at ten years post diagnosis. Dr. Levy also showed that the patients who mounted anti-idiotype

immune responses had a statistically significant improvement in survival (p=0.035) compared to those patients who did not mount an anti-idiotype immune response. In another analysis, Dr. Levy compared the survival of the patients in the SUMC trials based on their Follicular Lymphoma International Prognostic Index ("FLIPI") risk group. FLIPI places patients in one of three risk groups based on a scoring system using clinical observations at diagnosis. Patients are placed in a group that has either a high risk of death, intermediate risk of death or low risk of death. Subsequent clinical trials have shown that the FLIPI risks groups are also predictive of time to progression of disease following treatment with currently available drugs. Dr. Levy was able to place 83 of the 91 patients in a FLIPI risk group. He observed no difference in survival based on which FLIPI risk group was assigned to these patients. We are not aware of any other treatment for fNHL where FLIPI risk group is not predictive of clinical outcome.

An independent clinical trial of a patient-specific active idiotype immunotherapy similar to the one tested at Stanford was conducted at the National Cancer Institute ("NCI") to treat patients with fNHL. The NCI clinical trial results were published in *Nature Medicine* in October 1999. Patients treated in the NCI clinical trial had previously achieved a clinical complete response ("CR") following an initial course of chemotherapy, that is, no tumor was apparent by physical examination and CT scans. Positive immune responses to the patient-specific active idiotype immunotherapy were reported for 19 of 20 immunized patients. Although all 20 patients were in clinical complete remission, 11 of these 20 patients were shown to have lymphoma cells in their peripheral blood following chemotherapy using a very sensitive DNA-based test. After completing the course of immunization with the active idiotype immunotherapy, eight of these 11 patients were shown to have no lymphoma cells in their peripheral blood using the DNA-based test. These results suggest that active idiotype immunotherapy was able to induce a molecular complete response in patients that had minimal residual disease following chemotherapy.

Genitope initiated its Phase 2 clinical trial of MyVax in 1999 and immunized 21 patients. Data updated in the fourth quarter of 2007, shows nine of the 21 patients (42.8%) remained progression-free as of the last clinical follow-up (72 to 100 months post-chemotherapy). Of the 21 patients, two were low risk FLIPI, with one in remission, 11 were intermediate risk FLIPI, with four in remission, and eight were high risk FLIPI, with four in remission. The nine patients that remain in remission are separated in time from the progressing patients and define a plateau on the Kaplan-Meier curve. These results are shown on the Kaplan-Meier curve below.

Genitope Phase 2 clinical trial - fNHL Post Chemotherapy
Progression Free Survival from End of Chemotherapy
(N= 21)



Based on the positive results of patient-specific active idiotype immunotherapies in these Phase 2 clinical trials, Genitope initiated a pivotal, randomized, double-blinded, controlled Phase 3 clinical trial in November 2000.

Phase 3 Trial Design

The Phase 3 clinical trial of MyVax randomized 287 patients and was conducted at 34 treatment centers in the United States and Canada. In this clinical trial, patients first received chemotherapy to reduce their tumor burden, followed by a rest period. Patients who maintained at least a partial response ("PR") through the rest period were then randomized to receive either MyVax or a non-specific immunotherapy control.

Patients were scheduled to receive seven immunizations over a 24-week period, which represented two more immunizations than were administered in Genitope's initial Phase 2 clinical trial. Physical evaluations of the patients were conducted monthly during the immunization period and every three to six months after completion of the course of immunizations. A CT scan occurred prior to the first immunization, 2 to 4 weeks after the 7^{th} immunization and every six months following the last immunization for the two years of follow-up to detect disease progression. Unscheduled CT scans were performed if the principle investigator suspected progressive disease based on physical

examination. CT scans were read by an independent, central radiology group, which was designed to ensure a consistent determination of patients' responses to MyVax. The primary endpoint of the clinical trial was PFS, which was the interval of time measured from enrollment during which a patient was alive with no evidence of disease progression. Enrollment occurred when the patient was assigned to receive either MyVax or the control immunotherapy. The clinical trial was designed to evaluate whether a statistically significant increase in PFS was observed in patients receiving MyVax compared to patients receiving the control immunotherapy.

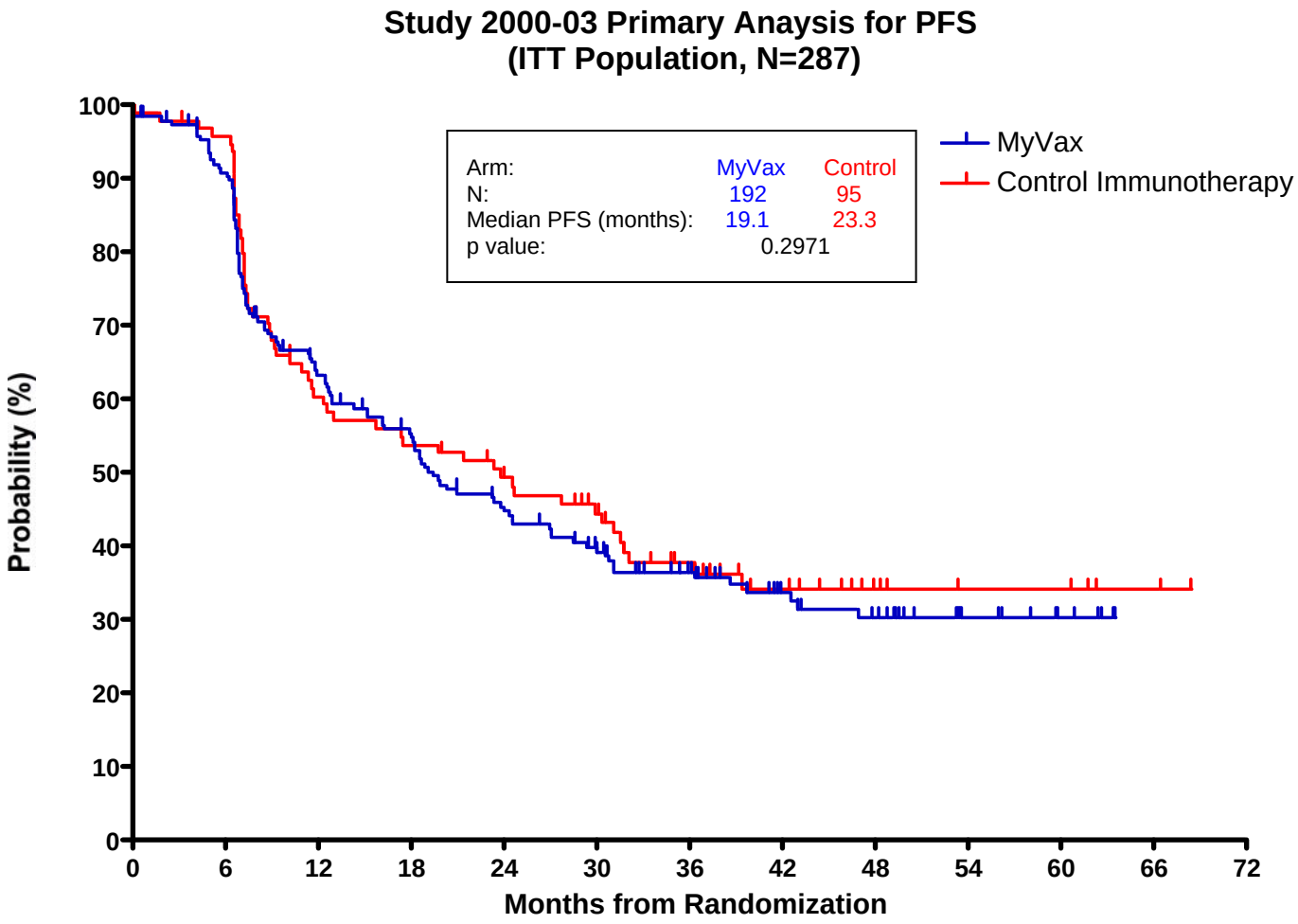
The patient population for Genitope's Phase 3 clinical trial consisted of patients with previously untreated fNHL. These patients had an International Working Formulation ("IWF") classification of B, C or D and were in stages III or IV. Patients first received 8 cycles of CVP chemotherapy over a 21 week period. Patients who responded to the CVP regimen with a PR or better and maintained a response during a 26 week rest period were then randomized to receive a seven immunization series of either MyVax or the control immunotherapy every four weeks over a 24 week period in a 2:1 fashion (MyVax : control immunotherapy). Each MyVax immunization consisted of 0.5 mg tumor idiotype chemically cross-linked to 0.5 mg Keyhole Limpet Hemocynanin ("KLH") in 1 mL of saline. Human immune systems typical mount strong immune response against KLH which is a foreign protein. The KLH is used to help enhance an immune response to each patient's tumor idiotype. Each control immunization consisted of 0.5 mg of KLH chemically cross-linked to itself in 1 mL of saline. Immunizations were administered subcutaneously ("SC") at two separate sites. In order to enhance the immune response, these injections were followed immediately by SC injections at the same sites with 250µg of an adjuvant, Leukine, a recombinant human granulocyte macrophage colony stimulating factor ("GM-CSF"). The GM-CSF dose was also divided equally between the two injection sites. For the three consecutive days following each immunization, a 250µg dose of GM-CSF was injected SC, divided equally between the two original injection sites. The SC injections over the four days constituted an immunization series.

In designing the Phase 3 clinical trial, Genitope originally proposed to FDA either a saline only control arm or no control immunizations. The FDA rejected this control and strongly encouraged Genitope to use a non-specific immunotherapy control (consisting of KLH and adjuvant) for the control arm. FDA's stated rationale was to maintain the blind in the trial. The KLH and GM-CSF adjuvant cause immunization site reactions and flu-like symptoms that resolve several days after each immunization series. The absence of those reactions and symptoms would unblind the investigators and patients as to the treatment each patient received. Genitope raised the concern that the non-specific immunotherapy control had not been tested in this manner before and might have clinical activity. Ultimately, Genitope complied with FDA's direction to proceed with the non-specific immunotherapy as the control for its Phase 3 clinical trial.

Phase 3 Results

Primary Endpoint

Genitope announced in December 2007 that there was no statistically significant difference in the PFS of patients receiving MyVax compared to patients receiving the control immunotherapy. The figure below shows the Kaplan-Meier curves for the MyVax arm and the control immunotherapy. There is no statistically significant difference between the MyVax and control immunotherapy arms.



Plateau of PFS for Both MyVax and Control Immunotherapy Arms

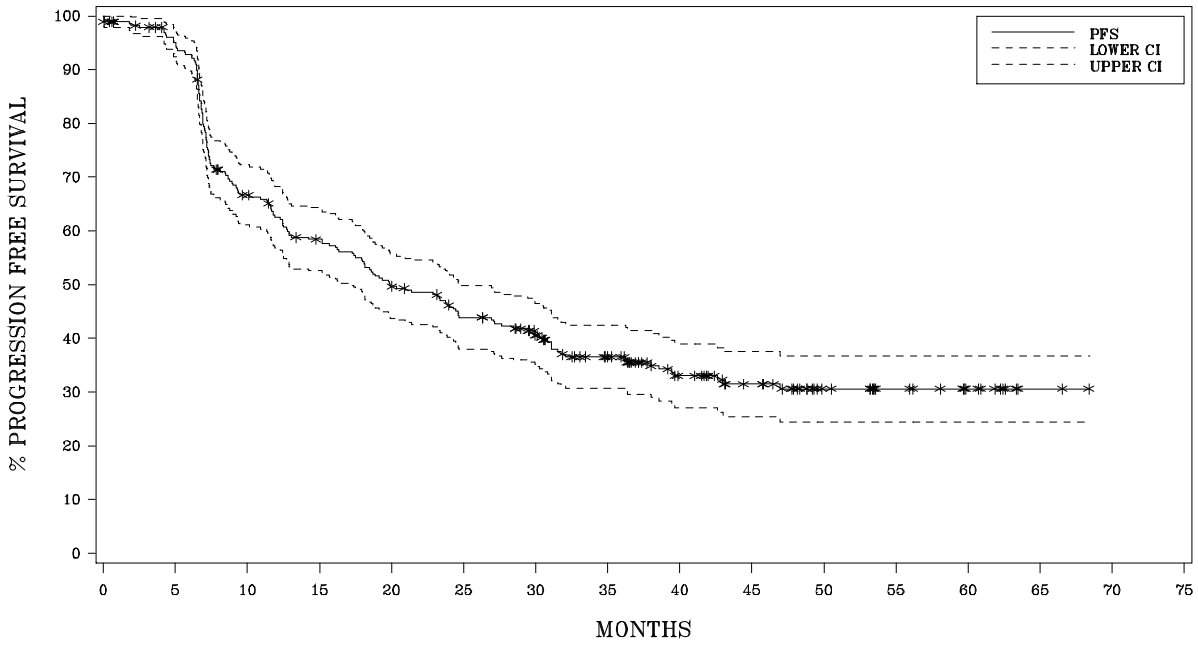
The data appear to demonstrate appreciable clinical activity in both the MyVax and the control immunotherapy arms. This apparent clinical activity in the control immunotherapy arm, which was raised with FDA as a potential result at the time the decision was made to use a non-specific immunotherapy as the control, is an unexpected and novel discovery. The data suggest that both MyVax and the control immunotherapy provide clinical benefit.

A significant number of patients in each arm demonstrated prolonged remissions relative to historical controls of patients who received chemotherapy alone. Using the statistical tool of a life table

analysis indicates there is a real plateau on the PFS curves. In addition to the life table analysis, the confidence intervals (labeled "Upper CI" and "Lower CI") in the figure below demonstrate additional support for a real plateau on the PFS curves. Plateaus are not part of the natural history of patients with fNHL who have a median risk or high risk FLIPI score. To Genitope's knowledge, plateaus have not been observed in median risk and high risk scoring FLIPI patients with any currently available treatment for fNHL, particularly with CVP but also with rituximab. These plateaus are consistent with results from prior active idiotype immunotherapy trials and suggest long-term, and potentially life-long, remissions.

GENITOPE CORPORATION
PROTOCOL 2000-03
INDICATION: SPECIFIC IMMUNOTHERAPY, RECOMBINANT IDIOTYPE CONJUGATED TO KLH WITH GM-CSF FOR TREATMENT OF FOLLICULAR NON-HODGKIN'S LYMPHOMA

FIGURE
SUMMARY OF PROGRESSION FREE SURVIVAL (PFS)
ITT POPULATION (N = 287)



NOTE: PROGRESSION FREE SURVIVAL IS CALCULATED FROM RANDOMIZATION.
NOTE: THE CURVE IS ESTIMATED BY KAPLAN-MEIER METHOD.
* CENSOR POINT
Source::fredette /pub/studies/genitope/200003/final/plots/g22_pfs_ci Jan 23, 2008 13:24

Response Improvement Results

Response improvements following immunization were observed in both arms of the Phase 3 trial. These response improvements were notable because they occurred one to two years following chemotherapy without any other therapeutic intervention. Response improvements were determined by comparing a patient's CT scans prior to immunization and the CT scans 2 years post immunization. Ninety-one patients, who were either a PR or CRu at randomization and completed the 2 year follow-up post immunization, were assessed and response improvements were noted in 50 of

these patients. Response improvements have been an endpoint upon which FDA has approved therapies in the past.

Summary of Response Improvement

	Principal Investigators and/or Central Review			
	PR to CR	**PR to CRu**	**CRu to CR**	**Total**
MyVax	16	9	6	31
Control Immunotherapy	9	5	5	19
Total	25	14	11	50

Immune Response Testing

Blood was collected from patients for immune response testing prior to immunizations #1, #3, #4, #5, #6 & #7, 2 to 4 weeks after immunization #7, and 3 months, 6 months, 9 months & 12 months following immunization #7. All patients were tested for anti-idiotype and anti-KLH immune responses in a blinded fashion. The immune response assays used were quantitative. So, the magnitude of an immune response and its time of appearance and duration can be compared between patients.

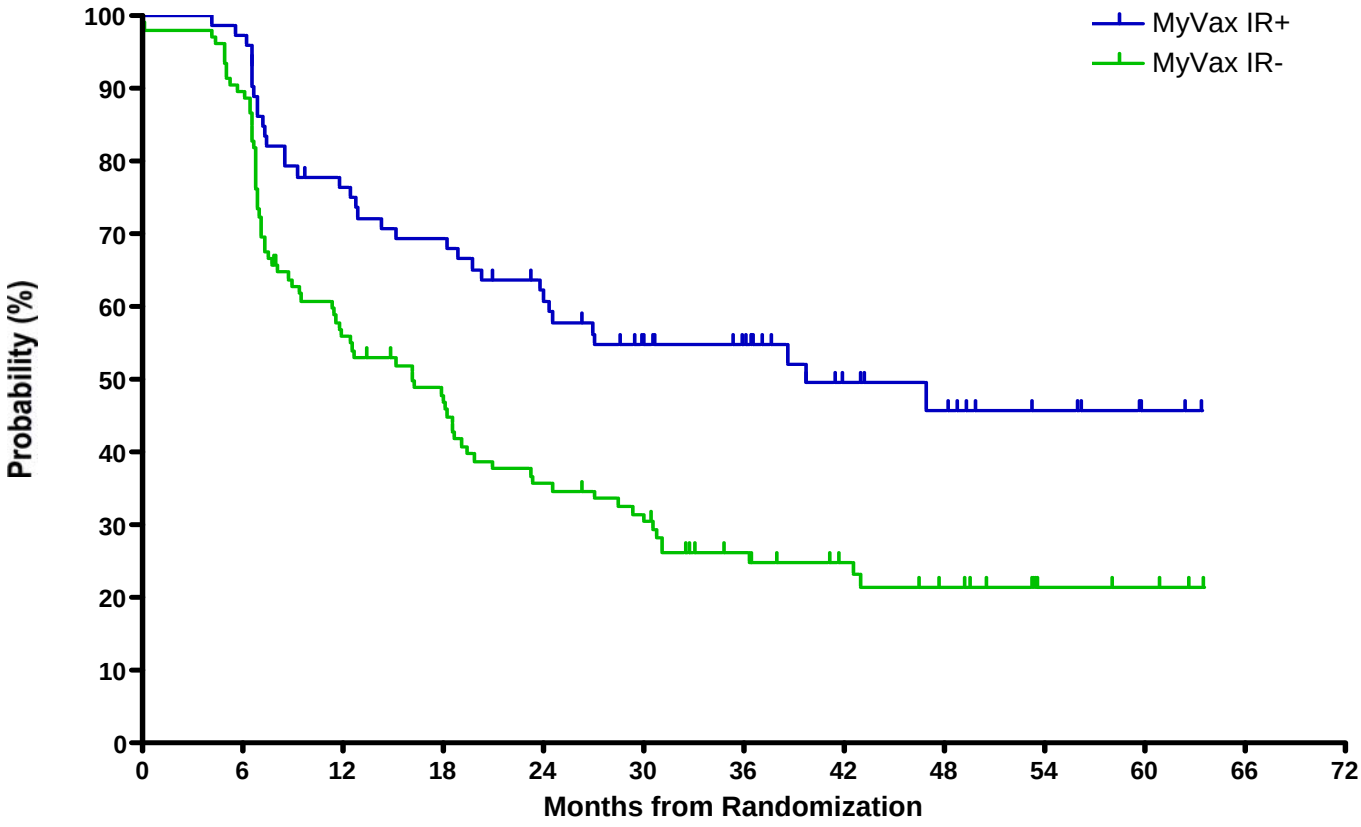
Anti-Idiotype Humoral Immune Response Results

There were 178 immune response evaluable patients in the MyVax arm. Of those 178 patients, 73 patients (41%) were IR+ and 105 were IR-. In a pre-determined endpoint in Genitope's Phase 3 Statistical Analysis Plan ("SAP"), the IR+ patients in the MyVax arm had a highly significant improvement in PFS compared to the IR- patients in this arm. While a true median for this analysis has not yet been reached, the calculated median PFS for IR+ patients in the MyVax arm was more than twice the median of the IR- patients in the MyVax arm. The difference of 39.7 months compared to 16.2 months is highly statistically significant with a p-value of 0.0003.

IR+ compared to IR- patients in MyVax arm

	IR+	**IR-**
Number of patients	71	105
Median PFS (months)	39.7	16.2
Number of patients who progressed	35	78
Number of patients who did not progress	38	27
Non-randomized statistical significance p=0.0003		

Below is a Kaplan-Meier curve illustrating the difference between the IR+ and IR- patients in the MyVax arm.

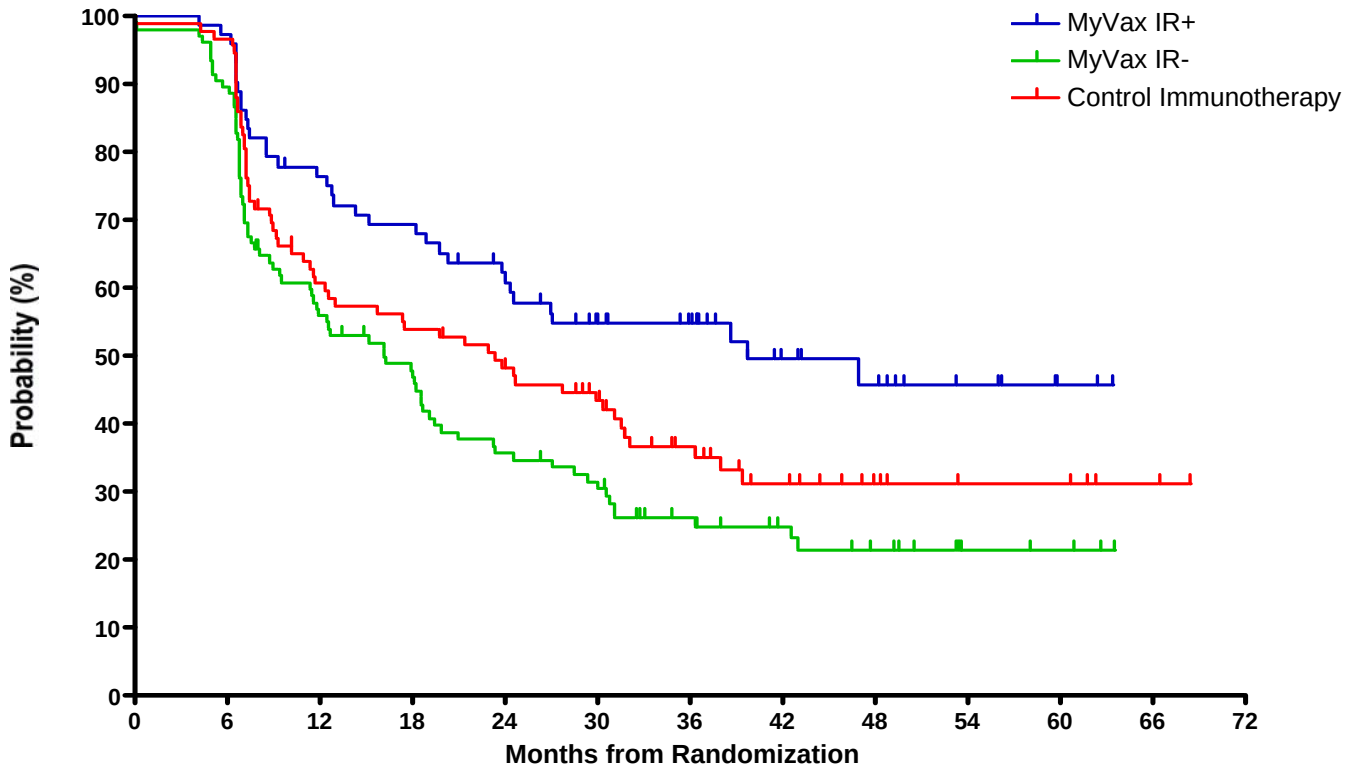

MyVax IR+
MyVax IR-
Probability (%)
100
90
80
70
60
50
40
30
20
10
0
0
6
12
18
24
30
36
42
48
54
60
66
72
Months from Randomization

There were 92 immune response evaluable patients in the control immunotherapy arm. The IR+ patients in the MyVax arm had a statistically significant improvement in PFS compared to the control immunotherapy patients. While a true median for this analysis has not yet been reached, the calculated median PFS for IR+ patients in the MyVax arm was over 16 months more than the median of the control immunotherapy patients. The difference of 39.7 months compared to 23.3 months is statistically significant with a p-value of 0.0387. The IR- patients in the MyVax arm did not have a statistically significant improvement in PFS compared to the control immunotherapy patients with a p-value of 0.0935. Additionally, there is a plateau on the Kaplan-Meier curves for all three groups indicating that all groups are benefiting from their immunotherapy beyond what would be expected from chemotherapy alone.

IR+ compared to IR- patients in MyVax arm compared to control immunotherapy

Population	IR+	IR-	Control
N	73	105	92
Median PFS (months)	39.7	16.2	23.3
Number Progressed	35	78	59
Number Not Progressed	38	27	33
p value IR+ vs. Control = 0.0387			
p value IR- vs. Control = 0.0935			

Below is a Kaplan-Meier curve illustrating the difference between the IR+ and IR- patients in the MyVax arm and the control immunotherapy arm.



Genitope's Phase 3 data demonstrate that patients who can mount a specific humoral immune response to the idiotype receive significant clinical benefit, namely a longer period of PFS.

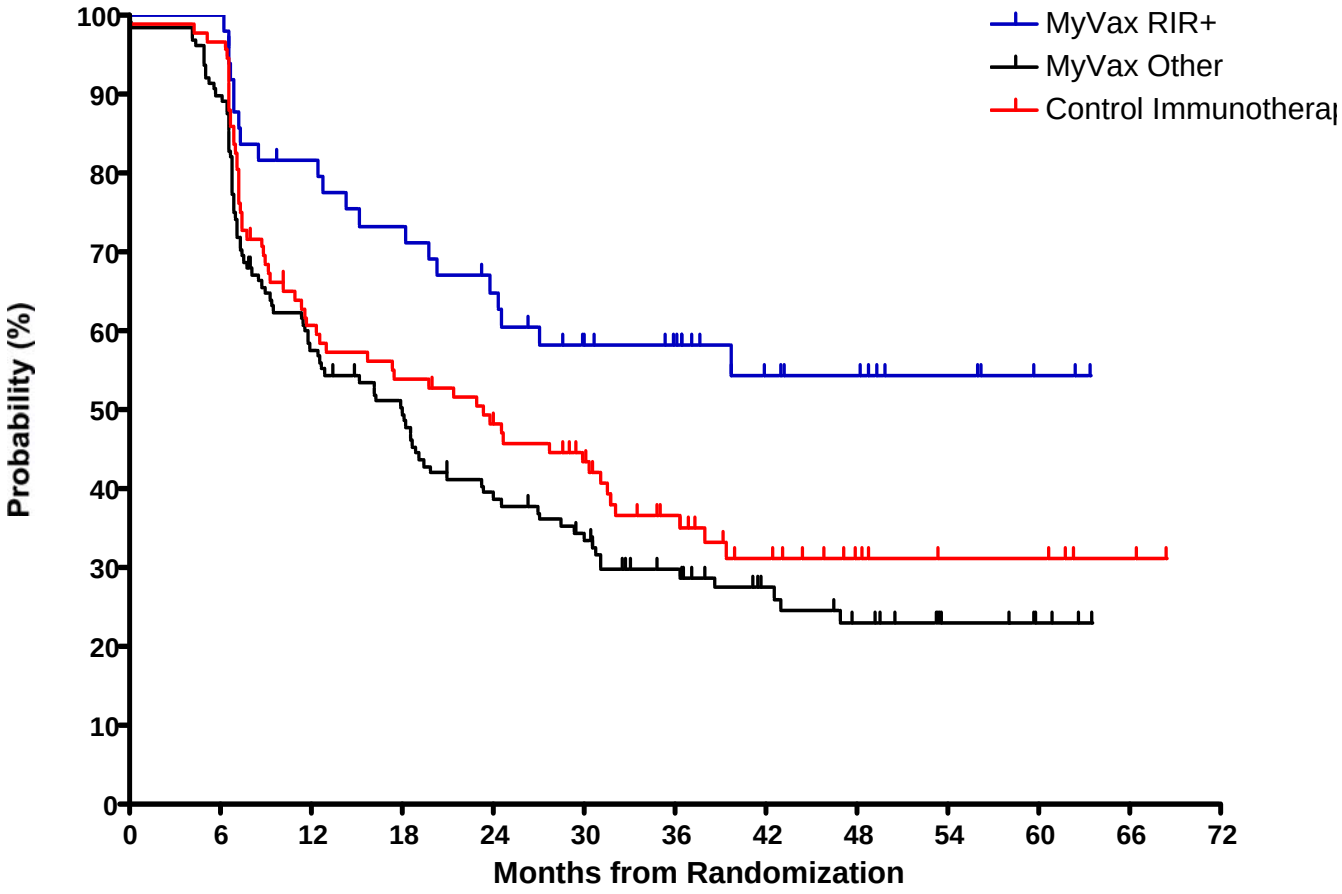
Robust Immune Responses

During the Phase 3 clinical trial, Genitope measured and quantified the level of immune response by patients. In early 2008, the FDA requested an analysis to compare patients in the MyVax arm who mounted a "robust" anti-idiotype immune response ("RIR+") with the other patients in the clinical trial. A RIR+ was defined by the FDA as an anti-idiotype titer greater than 1.8 µg/ml at least one test date and IR+ at three or more consecutive test dates. This analysis demonstrates that a RIR+ correlated with longer PFS.

RIR+ in MyVax arm compared to Other IR evaluable patients in MyVax arm compared to Control Immunotherapy
(N=270)

	RIR+	**Other**	**Control**
Number of patients	50	128	92
Median PFS (months)	>39.7	18	23.3
Number progressed	21	92	59
Number not progressed	29	36	33
p-value RIR+ compared to Control = 0.0194			
p-value Other compared to Control = 0.2113			

Below is the Kaplan-Meier curve illustrating the impact of a RIR+.

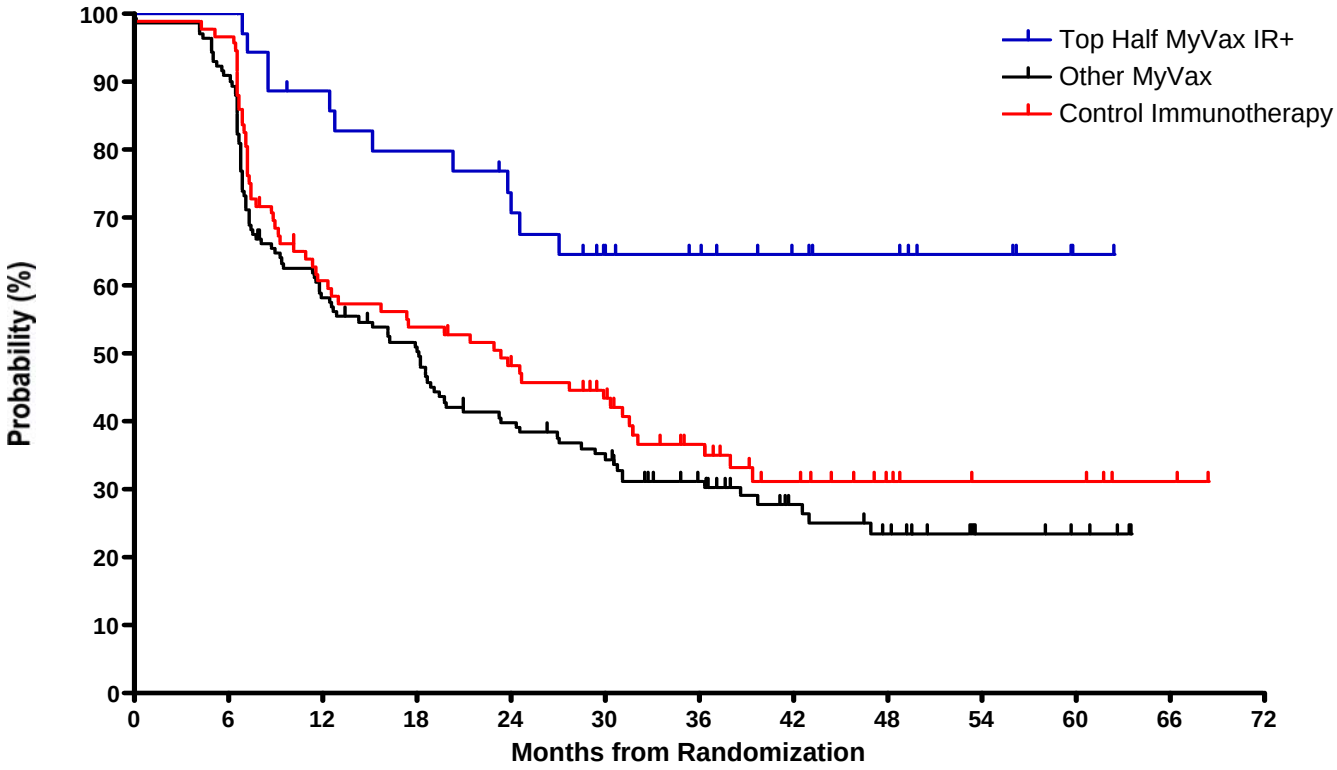


Another analysis of a robust immune response is to compare the most robust anti-idiotype immune response by maximum immune response (or tighter). This analysis demonstrates that this view of a robust response also correlated with a significantly improved PFS.

Top Half IR+ MyVax arm compared to Other IR evaluable patients in MyVax arm compared to Control Immunotherapy
(N=270)

	Top Half	**Other**	**Control**
Number of patients	36	142	92
Median PFS (months)	>39.7	18.1	23.3
Number progressed	12	101	59
Number not progressed	24	41	33
p-value RIR+ compared to Control = 0.0030			
p-value Other compared to Control = 0.2305			

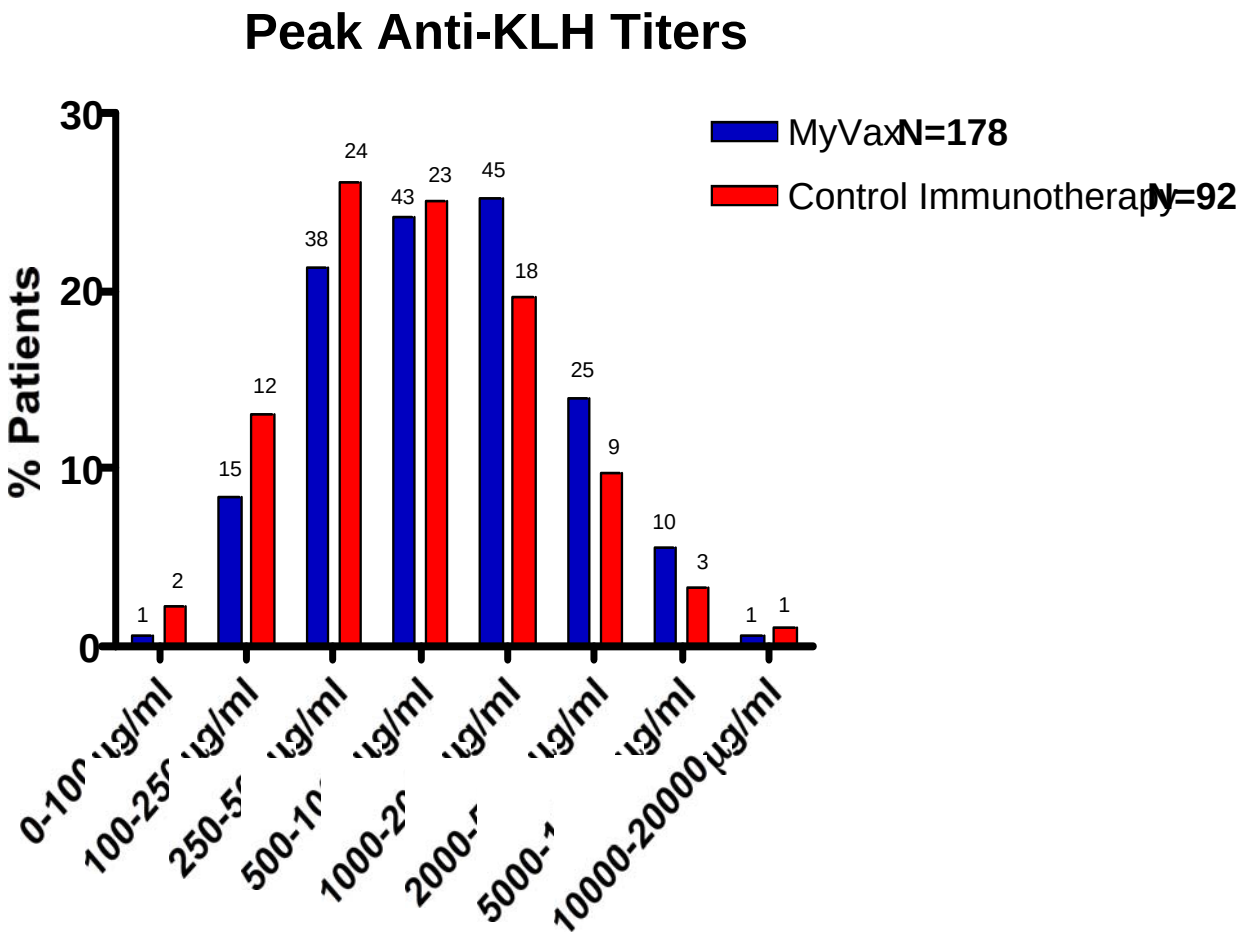
Below is the Kaplan-Meier curve illustrating the impact of the most robust anti-idiotype immune response by maximum response.



Genitope believes that the Kaplan-Meier curve above demonstrating the impact of a robust immune response provides a clinical path forward for the treatment of fNHL patients. If a patient can generate a robust immune response, that patient has a higher likelihood of long-term, and potentially life-long, remission from disease. Genitope's Phase 3 protocol included a six-month rest period post-chemotherapy followed by seven immunizations over a 24-week period. This protocol generated a RIR+ in 28% of the patients in the FDA requested analysis. Genitope believes that a shorter rest period following chemotherapy and a much longer immunization period (i.e. 52 weeks) could increase the percentage of patients who are RIR+.

A possible explanation for the significantly improved clinical outcomes for the patients in the MyVax arm mounting anti-idiotype immune responses is that those responses are only a reflection of the overall health of the patient's immune system. Comparing the immune response generated in the patients to the KLH directly addresses the issue of overall immune system health. The distribution of maximum anti-KLH immune response is the same between the MyVax arm and the control immunotherapy arm.

The distribution of maximum anti-KLH immune response between the MyVax arm and the control immunotherapy arm are compared in the bar graph below.

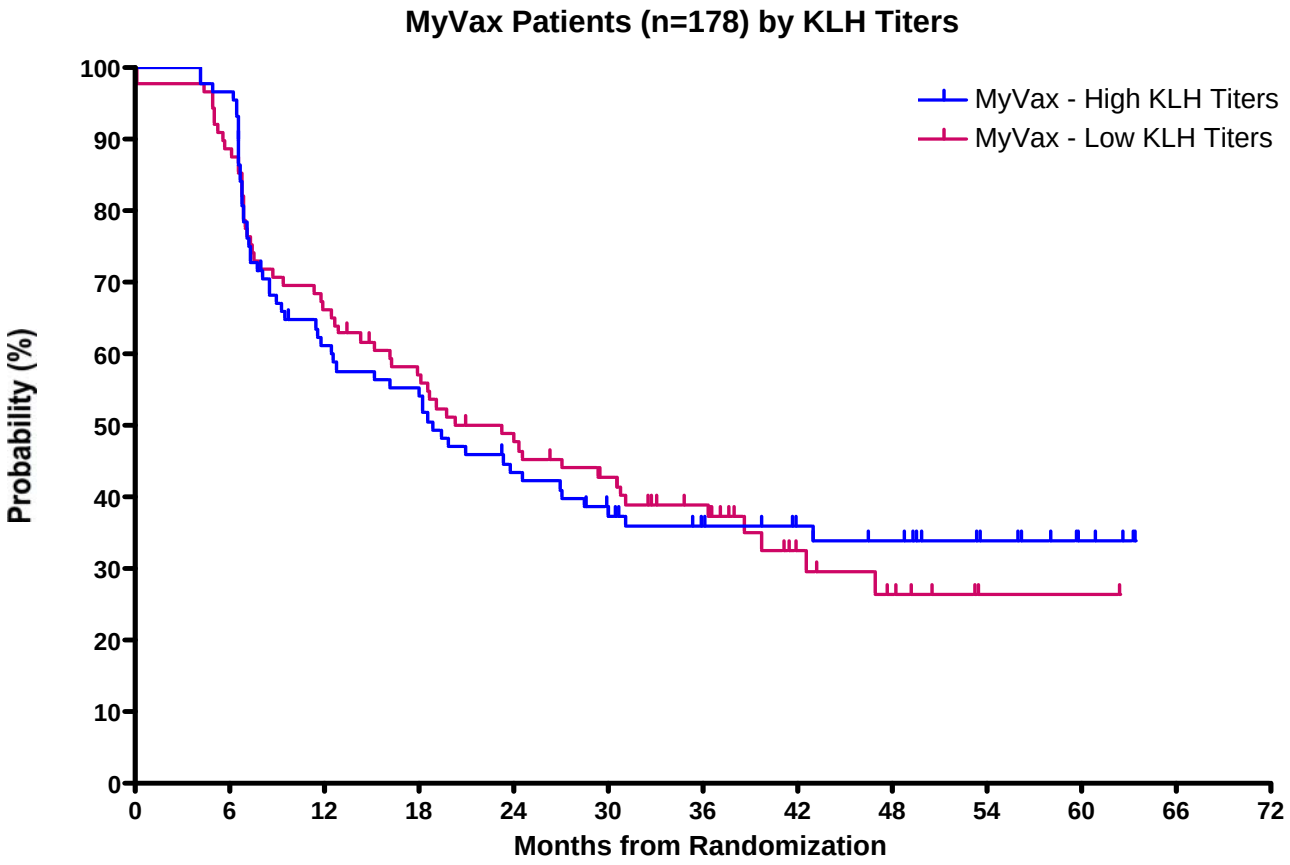


Another measure of the potential impact of the overall health of the patient's immune system and clinical outcome is to compare the patients with the top half (89 patients) by maximum anti-KLH immune response, or titer, in the MyVax patients with the MyVax patients with the lowest half by maximum anti-KLH immune response. There is no statistical difference between these two groups of patients.

IR+ compared to IR- patients in MyVax arm

	High KLH	Low KLH
Number of patients	89	89
Median PFS (months)	18.9	23.2
Number of patients progressed	56	58
Number of patients not progressed	33	31
Non-randomized statistical significance p=0.95		

This is illustrated in the Kaplan-Meier plot below.



These results indicate there is no correlation either positively or negatively between overall immune system health as measured by response to KLH and clinical outcome.

FLIPI Results

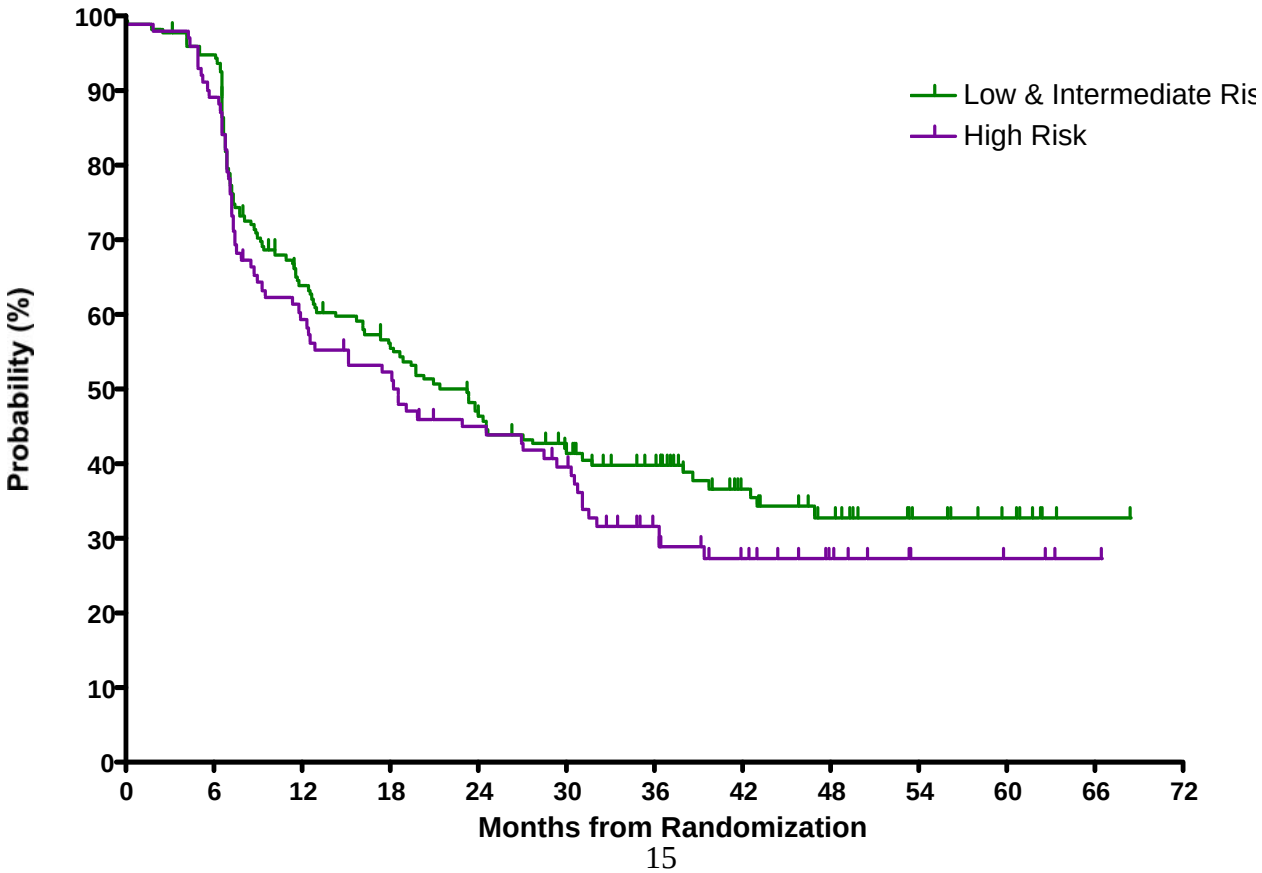
Although patients in the Phase 3 trial were not randomized based on their FLIPI group, there was excellent balance in the percentage of intermediate risk (52% vs. 55%) and high risk (36% vs. 38%) patients between the two arms. Patients in each arm of the clinical trial in the high risk FLIPI group demonstrated PFS consistent with the overall study population. This is an important and unanticipated discovery in that to our knowledge the clinical benefit observed with all other fNHL drugs has been directly correlated to the patient's risk group as determined by their FLIPI score.

An active immunotherapy (MyVax or the control immunotherapy) provided clinical benefit to patients in the clinical trial relative to historical controls of patients who receive chemotherapy alone, regardless of FLIPI category.

Intermediate & Low Risk FLIPI PFS compared to High Risk FLIPI

	Intermediate & Low Risk FLIPI	**High Risk FLIPI**
Number of patients	177	101
Median PFS (months)	23.2	18.5
Number of patients progressed	108	70
Number of patients not progressed	69	31
Non-randomized statistical significance p=0.27		

Below is the Kaplan-Meier curve illustrating no statistically significant difference in PFS for high risk FLIPI patients compared to the intermediate and low risk FLIPI patients.



To our knowledge, this duration of PFS for high risk FLIPI patients has not been achieved by any other drug in fNHL patients. In data from large studies of fNHL patients, high risk FLIPI patients have a shorter PFS as well as shorter survival. In Genitope's Phase 3 clinical trial, 31% of the high risk FLIPI patients were disease free with a median follow-up period of 48 months post chemotherapy, with many high risk FLIPI patients with PFS beyond five years post chemotherapy.

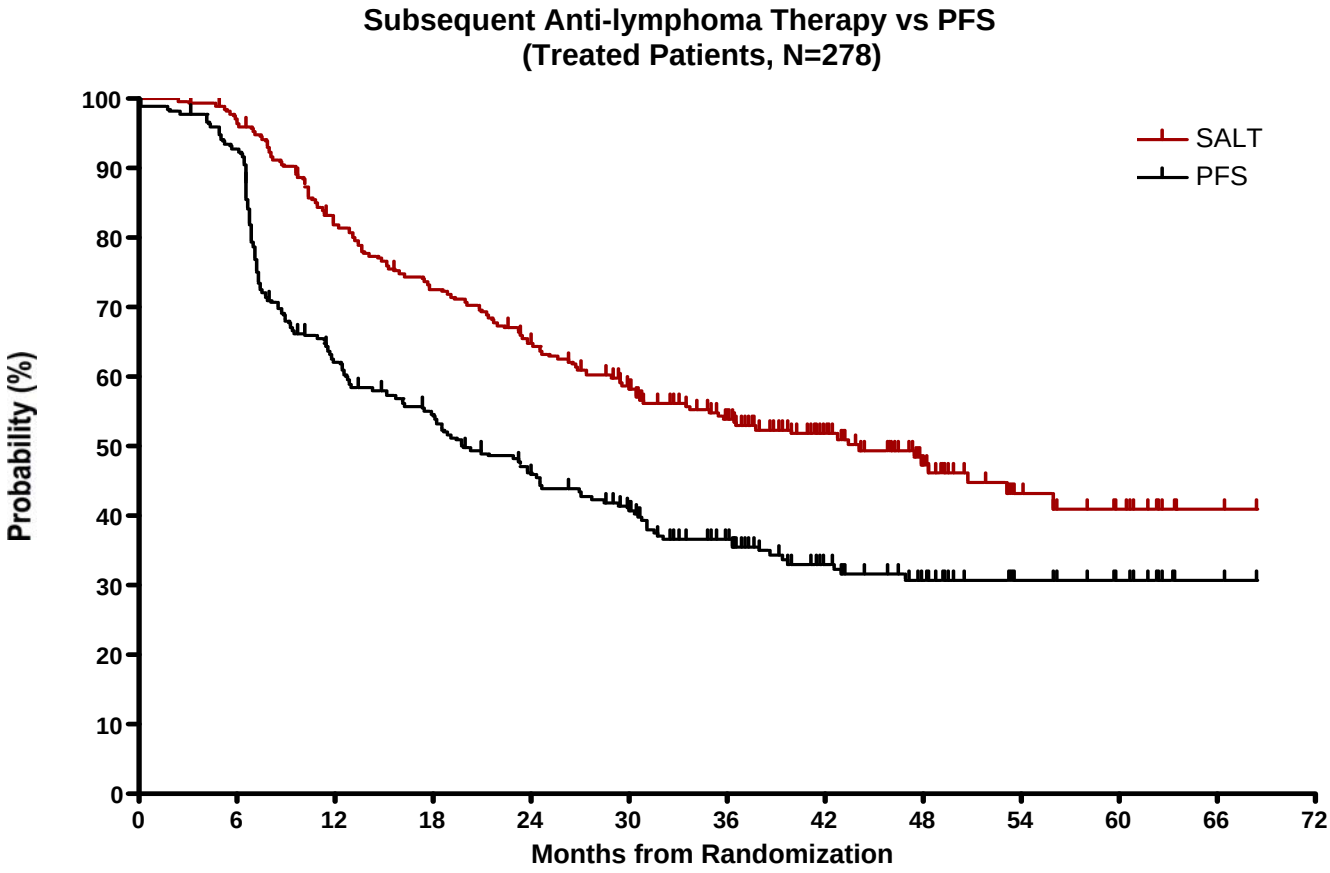
Subsequent Anti-Lymphoma Therapy Results

Patients with fNHL typically receive additional therapy relatively soon following disease progression. In Genitope's Phase 3 clinical trial, there were a substantial number of patients with progressive disease in both arms who have not required subsequent anti-lymphoma therapy ("SALT"). The fact that a significant number of patients have not received SALT suggests that (i) some patients who were identified as having progressed fNHL did not demonstrate clinical indications of progression and/or (ii) active immunotherapy (MyVax or non-specific immunotherapy control) provides a delayed clinical benefit. The second possibility is demonstrated in the response improvement data discussed above. After a median follow-up of 48 months post chemotherapy, 51% of the patients in the clinical trial have not received SALT.

Comparison of PFS compared to SALT-FS for the Treatment Received Population

	SALT-FS	PFS
Number of patients	278	278
Median PFS (months from randomization)	43.4	19.9
Number of patients who had an event	136	178
Number of patients who were censored	142	100

Below is a Kaplan-Meier curve illustrating the PFS of the clinical trial overall (labeled "PFS") compared to the time to SALT (labeled "SALT-FS").



Safety

MyVax has demonstrated an excellent safety profile to date. MyVax has been well tolerated in numerous clinical trials, with the majority of adverse events being only mild to moderate. These adverse events have included injection site and systemic effects. The most commonly reported injection adverse events were bruising, swelling, redness, itching, inflammation, pain and other similar reactions at the injection site. The most commonly reported systemic adverse events were fatigue, influenza-like illness, fever, chills, nausea, pain, back, chest or muscle pain, rash and diarrhea. Furthermore, MyVax is designed to target only the idiotype protein unique to tumor cells and, thus, shows evidence neither of harming normal cells, not impairing a patient's immune system.

Conclusion

Active immunotherapy has had a long history of successful clinical trials. For 20 years, active idiotype immunotherapy approaches have demonstrated significant long-term clinical benefit for patients. Genitope's MyVax demonstrated similar results in its Phase 3 clinical trial. However, Genitope also discovered that a non-specific immunotherapy also appears to provide long-term clinical benefit. Genitope believes that the failure of its MyVax Phase 3 clinical trial to meet its primary endpoint was due to unrecognized activity in the non-specific immunotherapy.

Genitope believes that its Phase 3 clinical trial demonstrated the following:

- MyVax results were consistent with 20 years of prior active idiotype immunotherapy trials.
- A non-specific, control immunotherapy appears to provide long-term clinical benefit.
- Both arms of the clinical trial demonstrated real plateaus of their Kaplan-Meier curves. The plateau of the MyVax arm was expected. The plateau of the control immunotherapy arm was not expected.
- An active immunotherapy approach (MyVax and control immunotherapy) provides statistically similar benefits to high risk FLIPI patients compared to the patients in the other FLIPI risk groups.
- After a median follow-up of 48 months after chemotherapy, 51% of the patients in the clinical trial have not received SALT.
- An active immunotherapy approach (MyVax and control immunotherapy) significantly delays the time to SALT.
- An active immunotherapy approach (MyVax and control immunotherapy) generates significant response improvement in patients. This is consistent with prior active idiotype immunotherapy trials.
- MyVax (and control immunotherapy) is extremely safe for patients.
- Patients who are IR+ have a highly statistically significant improvement in PFS compared to patients who are IR-.
- A more robust immune response is correlated with longer PFS.
- The clinical benefit seen in the IR+ patients is not correlated with the overall health of the patients' immune systems.

Genitope is extremely disappointed in the FDA's decision and that it will not be able to provide MyVax personalized immunotherapy to fNHL patients in the United States.