

ASX/Media Release

Benitec City of Hope Human Trial Update

8 December 2008, Melbourne, Australia: Leading developer of RNA interference (RNAi)-based therapeutics Benitec Limited (ASX: BLT) announced today that Dr Amrita Krishnan, had presented a poster on the human HIV trial at the American Society of Hematology conference held in San Francisco CA USA.

Dr Krishnan is the principal clinical investigator of the pilot study being undertaken at City of Hope in Duarte, California. The presentation was entitled "First in Human Engraftment of Anti-HIV Lentiviral Vector Gene Modified CD43+ Peripheral Blood Progenitor Cells in the Treatment of AIDS Related Lymphoma (ARL)".

This pilot feasibility study is supported through a collaboration between Benitec and City of Hope and is Benitec's first human trial. The trial uses a triple therapy delivered using a lentiviral vector developed at City of Hope. The rHIV7-shI-TAR-CCR5RZ vector suppresses HIV by expressing three nucleic acids that are directed against key steps in HIV replication.

The study transplanted autologous (patient derived) blood stem cells which were genetically modified using the lentivirus vector into four AIDS patients with lymphoma who first received high doses of chemotherapy. The study showed that cells engrafted in all four patients, that new blood cells expressed the anti-HIV RNA, and there were no complications.

"We have shown that we can deliver gene modified cells which have the potential to limit the HIV infection. If we can continue to develop this approach and successfully apply it to other AIDS patients, then genetic therapy for HIV could become a reality", said Dr Krishnan.

"We are very encouraged by these initial findings. This is an extremely important trial as it is the first human clinical trial with expressed RNA interference trigger (shRNA) and the first triple gene therapy combination trial for HIV/AIDS. It is also the first human trial for AIDS using hematopoietic stem cells (HSCs) transduced with lentiviral vectors" said Sue MacLeman, Chief Executive Officer, Benitec Limited.

A copy of the conference poster is attached.

The Study

The study with City of Hope is entitled, "A pilot study of the safety and feasibility of stem cell therapy for AIDS lymphoma using stem cells treated with a lentiviral vector-encoding multiple anti-HIV RNA's."

The pilot study is designed to determine the safety and feasibility of RNA-based anti-HIV therapy with lentivirus-transduced hematopoietic progenitor cells (HPC) in patients undergoing autologous hematopoietic stem cell transplantation (HCT) for intermediate and high grade AIDS lymphoma.

The lentivirus vector encodes three forms of anti-HIV RNA: RNAi in the form of a short hairpin RNA (shRNA) targeted to an exon in HIV-1 tat/rev (shI), a decoy for the HIV TAT-reactive element (TAR), and a ribozyme that targets the host cell CCR5 chemokine receptor (CCR5RZ). The vector, used to transduce autologous CD34-selected HPC, is called rHIV7-shI-TAR-CCR5RZ and was manufactured by the Center for Biomedicine and Genetics at City of Hope.

Following standard mobilization of HPC and collection by apheresis (HPC-A), a portion of the cells were cryo-preserved and left unmanipulated for later use as treatment. The remaining portions of the cells were enriched for CD34+ cells, cryo-preserved, and later genetically modified by infection with rHIV7-shI-TAR-CCR5RZ.

The subjects underwent conditioning therapy and at the time of autologous HCT, the rHIV7-shI-TAR-CCR5RZ transduced cells were infused, followed 24-hrs later by the infusion of untransduced autologous HPC-A.

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Forward-looking Statements

This press release contains forward-looking statements that reflect the Company's current expectations regarding future events. Forward-looking statements involve risks and uncertainties. Actual events could differ materially from those projected herein and depend on a number of factors including the success of the Company's research strategy, the applicability of the discoveries made therein, the successful and timely completion of clinical studies and the uncertainties related to the regulatory process.

About Benitec

Benitec is an Australian biotechnology company focused on licensing its extensive intellectual property portfolio and developing therapeutics to treat serious diseases using its proprietary ddRNAi technology. For additional information, please visit www.benitec.com.

About City of Hope

City of Hope is a leading research and treatment center for cancer, diabetes and other life-threatening diseases. Designated as a Comprehensive Cancer Center, the highest honor bestowed by the National Cancer Institute, and a founding member of the National Comprehensive Cancer Network, City of Hope's research and treatment protocols advance care throughout the nation. City of Hope is located in Duarte, Calif., just northeast of Los Angeles, and is ranked as one of "America's Best Hospitals" in cancer and urology by *U.S. News & World Report*. Founded in 1913, City of Hope is a pioneer in the fields of bone marrow transplantation and genetics. For more information, visit www.cityofhope.org.

First in Human Engraftment of
anti HIV Lentiviral Vector
Gene Modified CD34+
Peripheral Blood Progenitor
Cells in the Treatment of AIDS
lymphoma (ARL)

Background

- Autologous Stem Cell Transplantation for AIDS related lymphoma has low transplant related mortality
- Durable remissions may be seen in high risk patients
- Further improvement in outcome requires both effective lymphoma therapy and HIV therapy

HIV therapy

- Highly active antiretroviral therapy (HAART) has improved survival of pts with HIV infection
- HAART can reduce HIV levels to undetectable in the peripheral blood
- Reservoirs of HIV still remain in the tissues
- HAART can increase CD4 counts and improve immune function

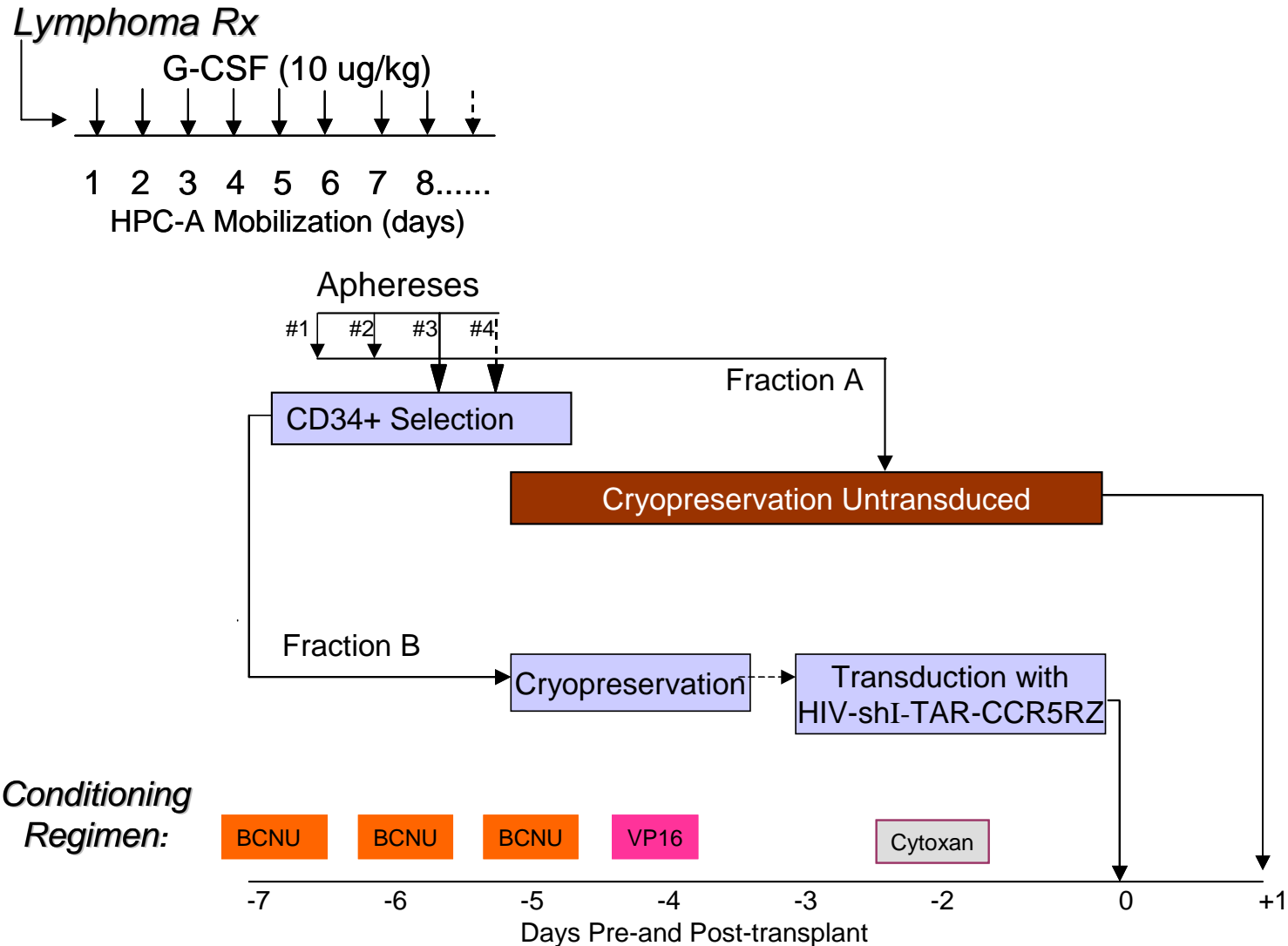
New strategies to treat HIV infection

- Render cells intrinsically resistant to HIV
- Multiplexed RNA based gene transfer renders autologously derived peripheral blood progenitor cells resistant to HIV infection

Limitations of HAART

- Long term compliance with HAART can be difficult
- Side effects such as lipodystrophy, hypercholesterolemia, kidney stones, renal insufficiency, liver function abnormalities are common
- Resistance to HAART may develop

Study Schema: AIDS Lymphoma



Methods

- Stem cells are mobilized with a combination of chemotherapy and GCSF
- A portion of cells are CD34+ selected frozen and then thawed and transduced with the lentiviral vector (Fraction B)
- A portion are frozen unselected (Fraction A)

Methods

- Patients with protocol defined high risk or relapsed HIV associated HL or NHL are eligible
- Viral Load < 50,000 gc/ml
- Free of opportunistic infection for one year prior to study enrollment

Results

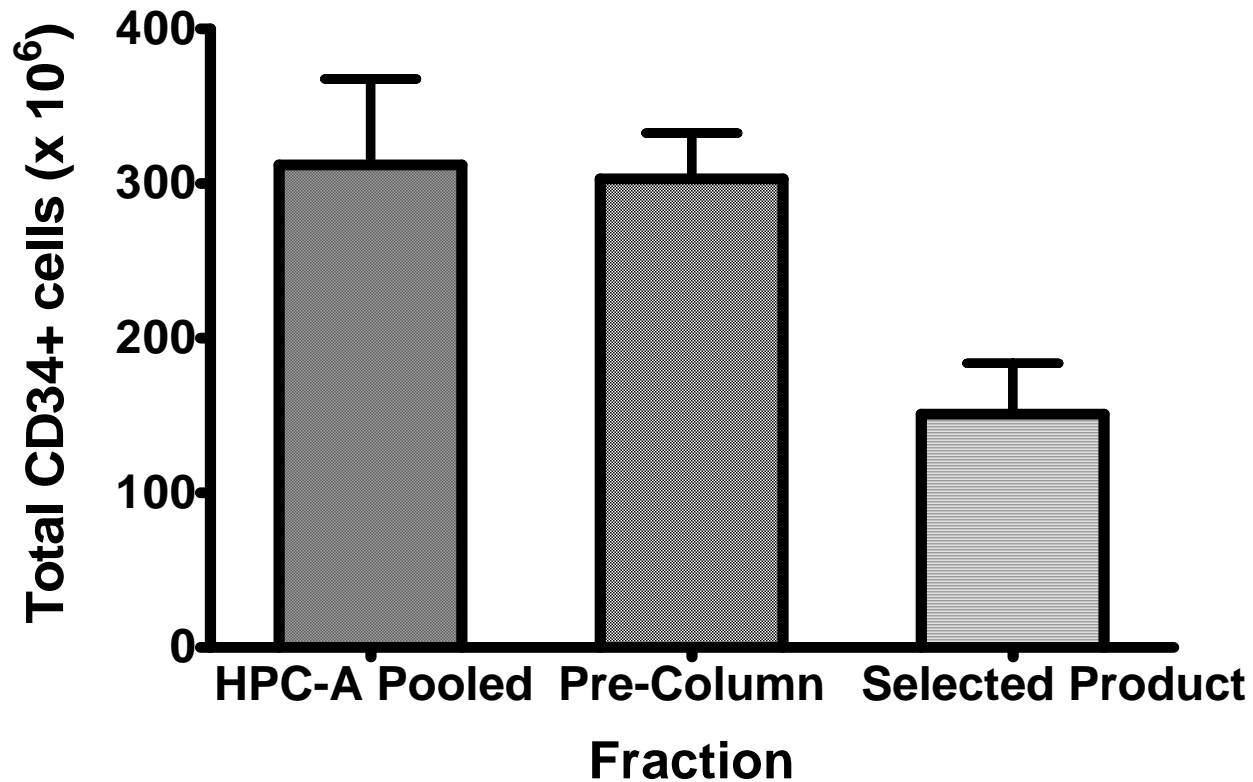
UPN	Sex	Date of Birth	Diagnosis	Age at Enrollment (Signed ICF)	Age at Transplant	Date of Research Transplant	Date of ANC Engraftment	Day Post Transplant of Engraftment	Current Follow Up Time point
301	M	12/15/64	Diffuse Large B Cell Lymphoma	42	N/A	N/A	09/30/07	11	N/A
302	M	01/18/61	Burkitt Lymphoma	46	N/A	N/A	N/A	N/A	N/A
303	M	06/11/66	Burkitt Lymphoma	41	N/A	N/A	06/09/08	12	N/A
304	M	02/25/52	Diffuse Large Cell Type (Immunoblastic Plasmacytoid)	55	55	02/19/08	03/01/08	11	D240 on 10/14/08
305	M	4/6/1962	Diffuse Large B-Cell (Anaplastic)	45	45	3/13/2008	3/24/2008	11	D240 on 11/11/08
306	M	11/24/1962	Plasmablastic Lymphoma	45	45	8/20/2008	8/31/2008	11	D90 on 11/18/08
307	M	2/12/1983	Diffuse Large B Cell Lymphoma	25	25	10/1/2008	10/12/2008	11	D30 on 10/31/08

UPN	Sex	Date of Birth	Diagnosis	Age	DOT	Engraftment	Date	F/U
301	M	12/15/64	Diffuse Large B Cell Lymphoma	N/A	N/A	09/30/07	11	N/A
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307	M	2/12/1983	Diffuse Large B Cell Lymphoma	25	10/1/2008	10/12/2008	11	D30 on 10/31/08

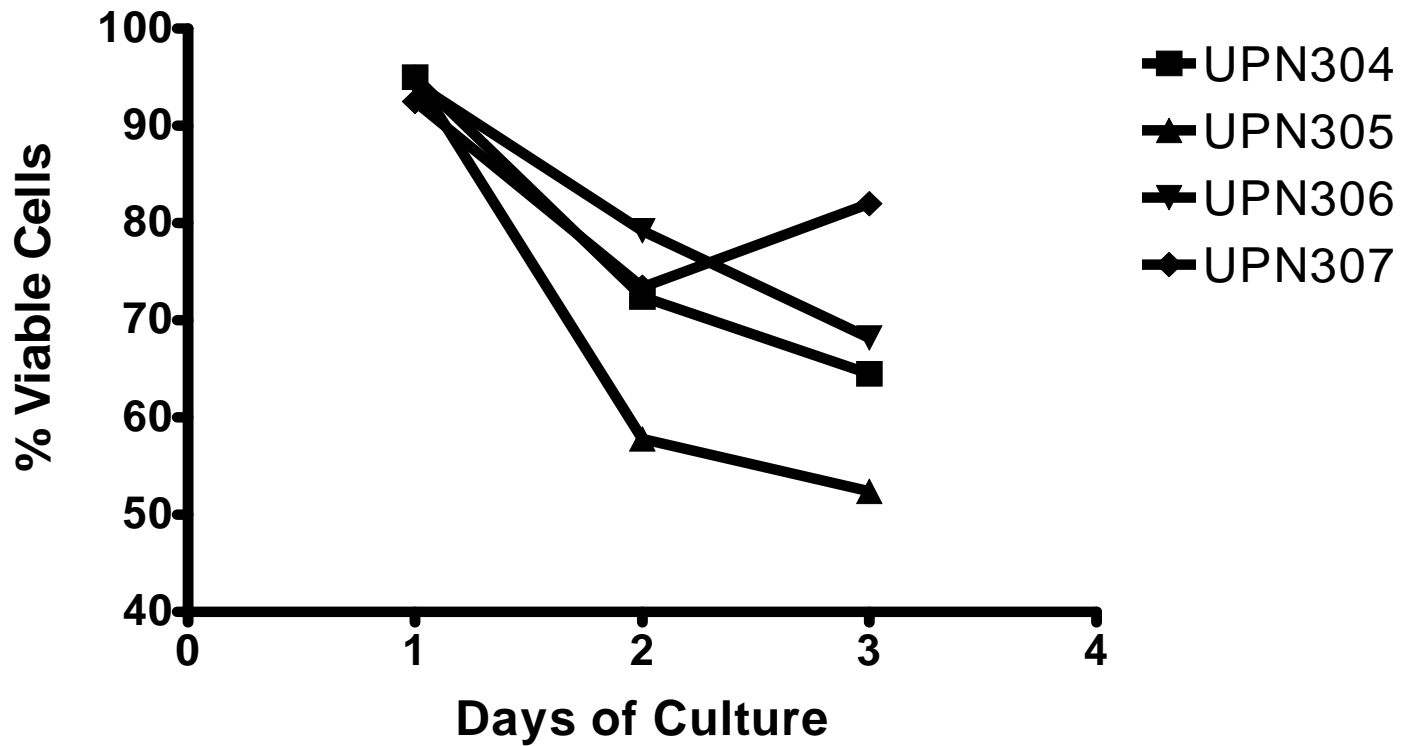
Results

- Four patients received FxA and FxB
- One patient received only FxA
- No infusion reactions were seen
- Median time to WBC engraftment—
11 days

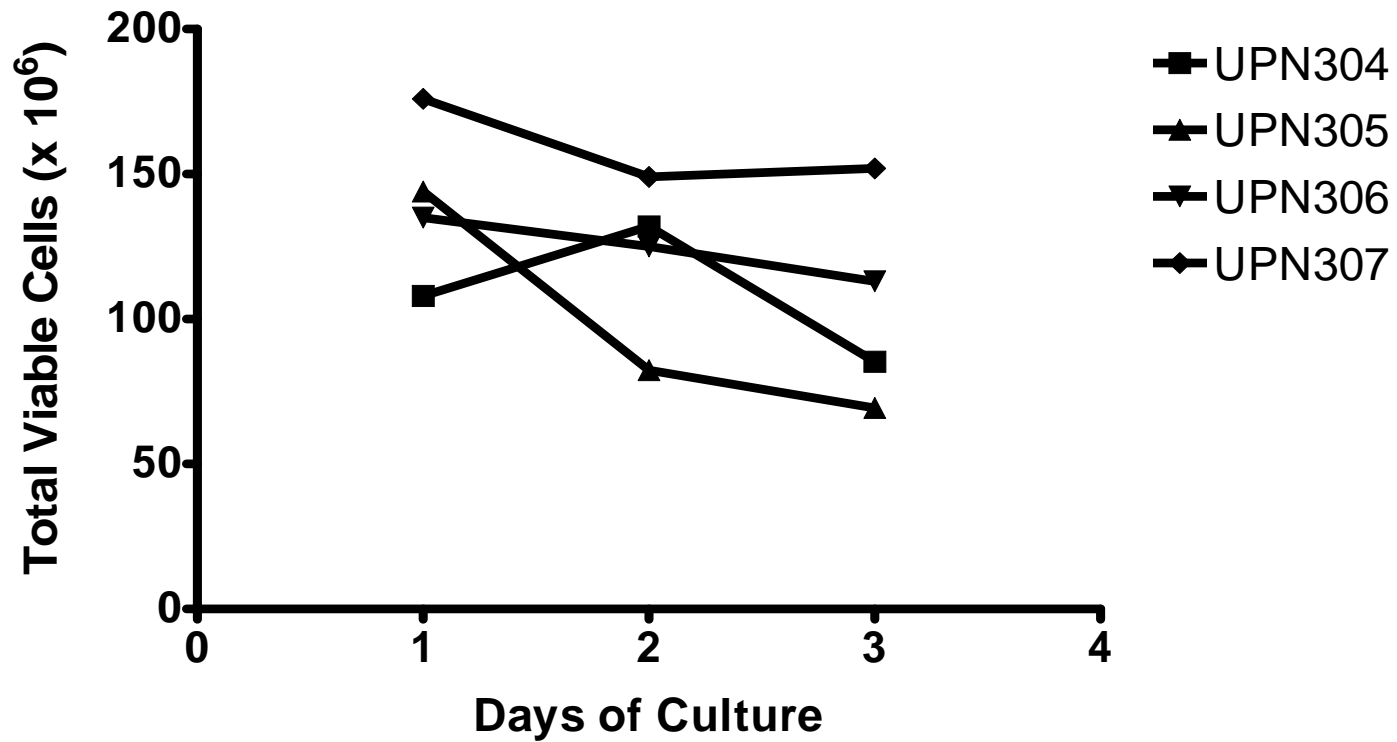
Summary CD34 Recovery



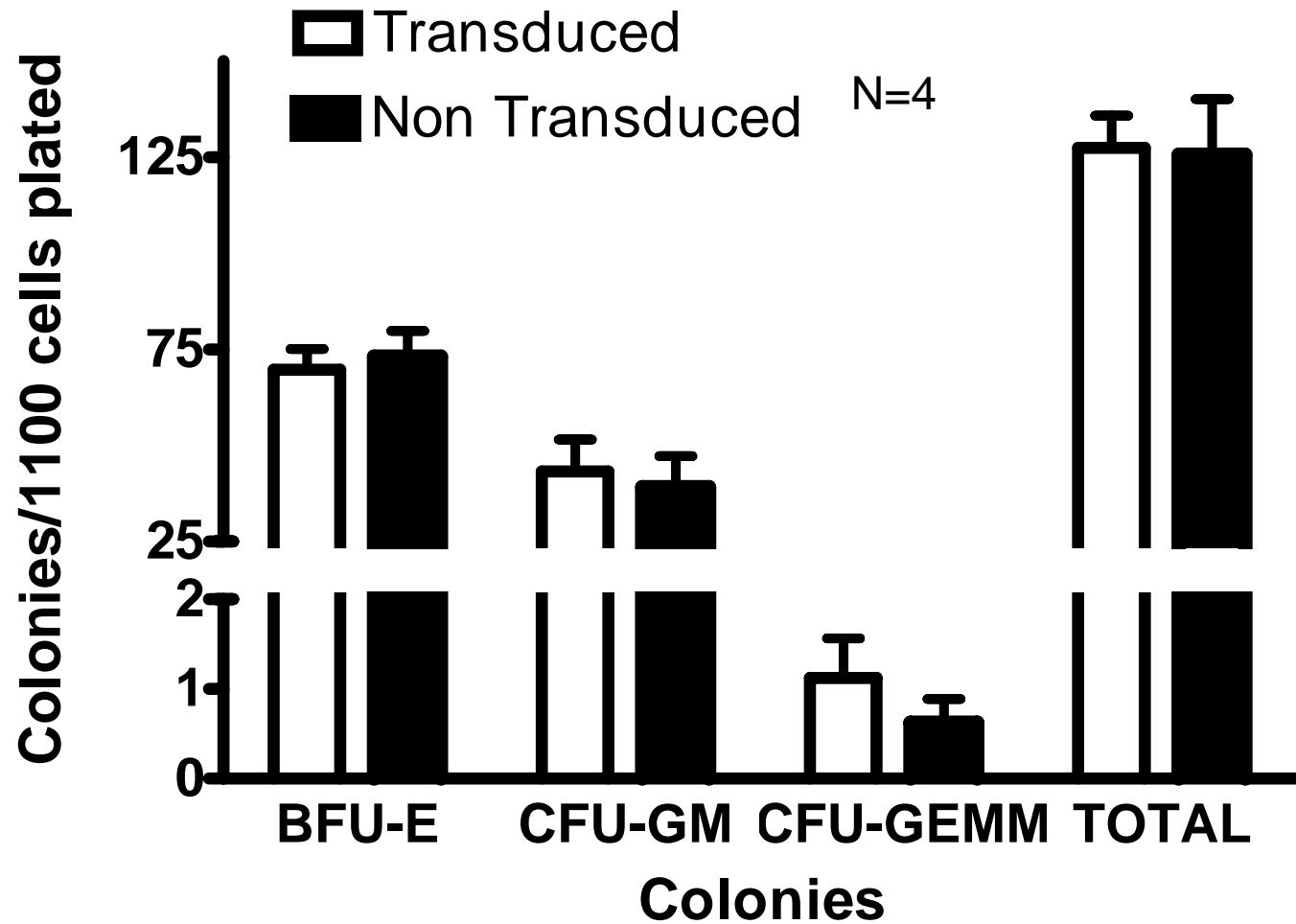
Viability of Cell During Transduction



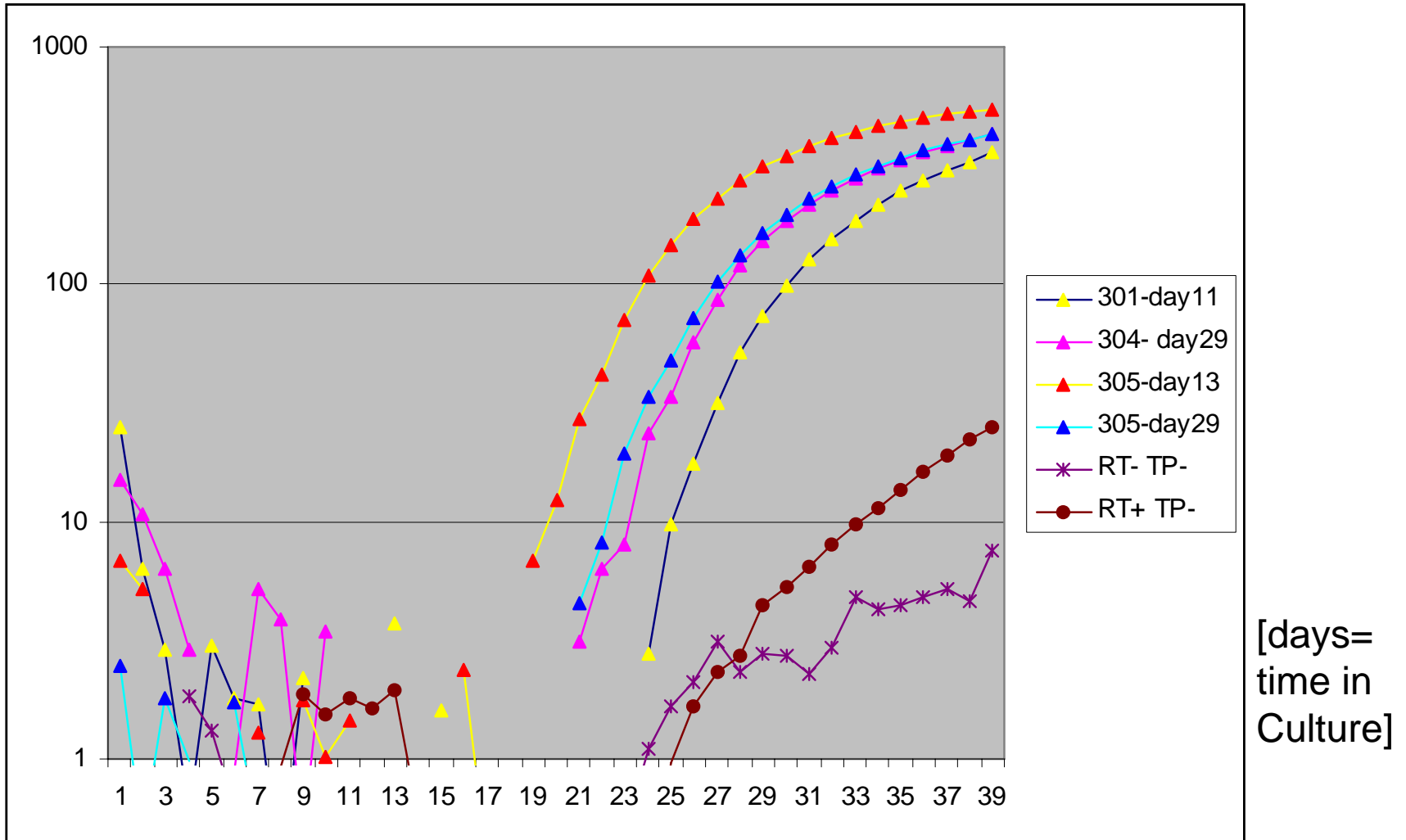
Total Viable Cells During Transduction



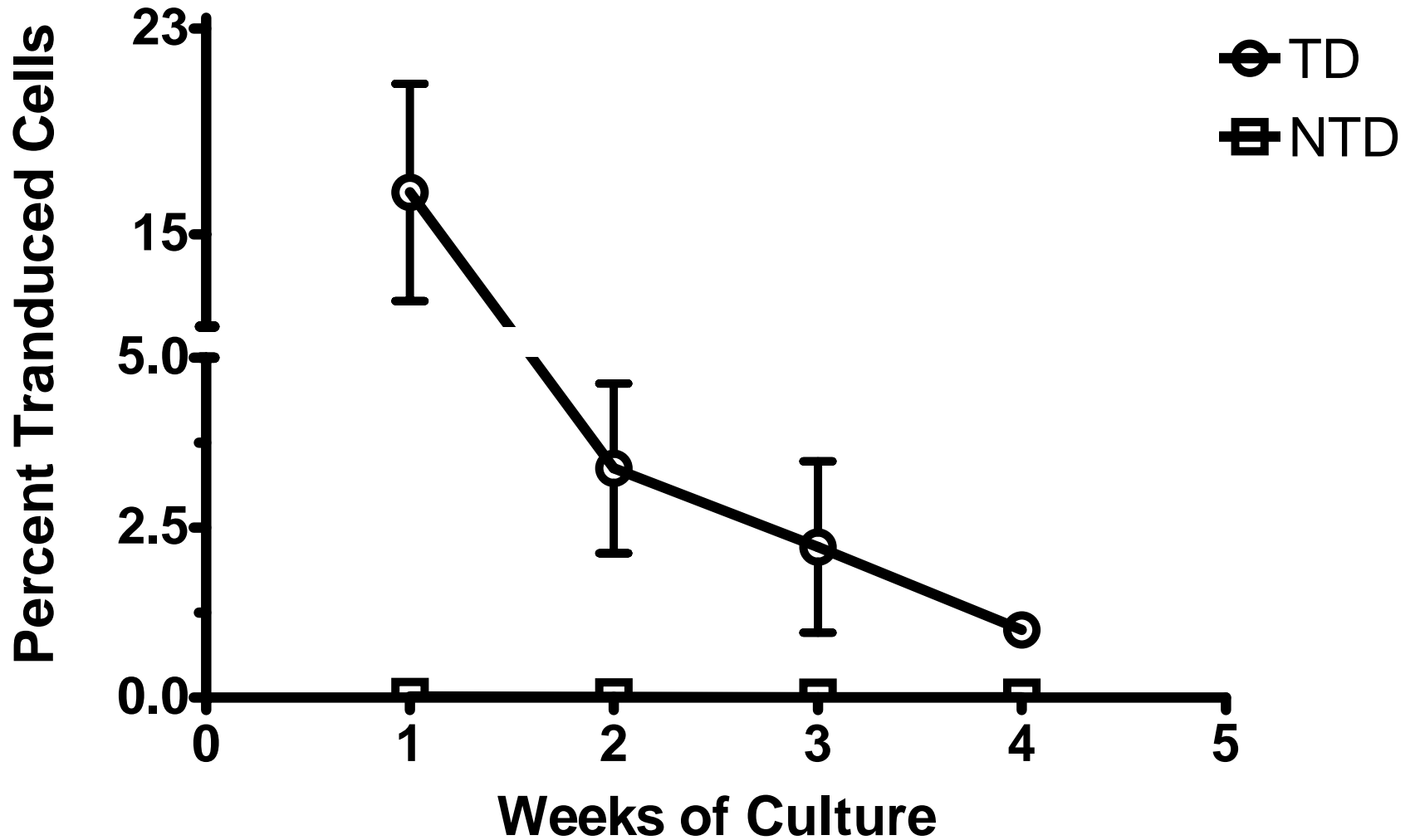
CFU-Assay



In vitro RNA Expression in Transduced Cells



In Vitro Gene Marking Analysis



Gene Marking in Vivo

UPN #	RX Collected (CD34+/kg)	Exp Collected (CD34+/kg)	Infused viable CD34+/kg	Marked CD34+ cells/Total CD34+ cells	1 month	2 months	3 months	4 months	6 months	8 months
302	2.8E+06	3.5E+06	1.6E+05	NA	NA	NA	NA	NA	NA	NA
304	3.9E+06	3.6E+06	7.7E+05	0.16%	0.11%	0.08%	0.08%	0.07%	0.04%*	0.12%
305	3.4E+06	3.8E+06	7.3E+05	0.18%	0.05%	0.04%*	0.05%*	ND	0.029%*	
306	5.6E+06	8.8E+06	1.2E+06	0.17%	0.07%*	0.19%				
307	6.51E+06	1.27E+07	1.6E+06	0.19%	0.11%*					

*=Between Limit of Quantitation and Limit of Detection

Conclusions

- Lentivirus transduced HCT is safe and feasible
- Gene marking was observed in all patients treated and was consistent with the ratio of transduced:untransduced cells infused
- Duration of gene marking in peripheral blood continues to be followed

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