

11/5/99

PRELIMINARY REPORT (additional test results to follow)  
Transfer factor testing

Background and rationale: 1) Cancer is the second leading cause of death in the US. The rate of nearly every type of cancer is on the rise. Despite billions of dollars in research, the mortality rate has remained nearly unchanged since the 1960's using convention treatments such as radiation, surgery and chemotherapy. Thus, there is considerable interest in using immune modulation as an adjuvant for cancer therapy. Natural killer cells are particularly important in destroying cancer cells.

Purpose of study: 1) To determine the in vitro anti-cancer effects of Transfer Factor and Transfer Factor Plus using PBMC isolated from human volunteers and assaying the increased ability of the NK cell population to kill K562 erythroleukemic cells.

Methods: 1) PBMC killing of K562 (erythroleukemic) cells

Results: 1) Transfer Factor increased NK-cell killing by 100% and Transfer Factor Plus by 250%.

Conclusions: Transfer Factor and Transfer Factor Plus induced immune-based lysis of K562 cells at a level unprecedented in the director's experience or in the known medical literature. Since NK cell function is so crucial in killing cancer cells, these products are ideal candidates for cancer adjuvant therapy. In addition, NK cells form a first line of defense against infections from viruses and certain other microorganisms. Killing assays against K562 cells have also been correlated with increased activity against chronic and acute infections as well.



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### Transfer Factor Plus™ Study (4Life™)

Sample Name	# of Live K562 Cells	# of Dead K562 Cells	Mean of Dead Cells	% Increase in Killing
Baseline - a	99.0	1.3		
Baseline - b	98.1	1.9	1.6	
Positive (PBMC) - a	95.8	4.2		
Positive (PBMC) - b	97.1	2.9	3.6	
Negative (Flour) - a	97.3	2.7		
Negative (Flour) - b	96.6	3.4	3.1	
Transfer Factor Plus™ (200µl) - a	89.7	10.3		
Transfer Factor Plus™ (200µl) - b	89.1	10.9	10.6	248%
Transfer Factor Plus™ (20µl) - a	91.8	8.2		
Transfer Factor Plus™ (20µl) - b	92.3	7.7	8.0	161%

### Transfer Factor™ Study (4Life™)

Sample Name	# of Live K562 Cells	# of Dead K562 Cells	Mean of Dead Cells	% Increase in Killing
Baseline - a	95.8	4.2		
Baseline - b	96.9	3.1	3.7	
Positive (PBMC) - a	95.2	4.8		
Positive (PBMC) - b	94.8	5.2	5.0	
Negative (Flour) - a	94.2	5.8		
Negative (Flour) - b	94.7	5.3	5.6	
Transfer Factor™ - a	87.8	12.2		
Transfer Factor™ - b	89.7	10.3	11.3	103%

### Transfer Factor™ and Transfer Factor Plus™ Study (4Life™)

Sample	Result
Transfer Factor™	No toxicity observed
Transfer Factor™	No toxicity observed
Transfer Factor Plus™	No toxicity observed
Transfer Factor Plus™	No toxicity observed

HHV-6 assay						11/18/99
(ug/ml)	Day 1	Day 3	Day 7		Mean (Day 3)	log reduction in killing
Flour (negative)						
100	1.6	2.8	4.9		4.75	
10	1.7	2.2	4.6			
Transfer Factor™						
100	<1	1.4	3.2		3.3	1.45
10	<1	1.6	3.4			
Transfer Factor Plus™						
100	<1	<1	2.5		2.65	2.1
10	<1	1.3	2.8			

# *Independent Study by Dr. Darryl See*

## **Independent Study Says 4Life™ Transfer Factor™ Boosts Immune System at “Unprecedented” Levels**

Provo, Utah – When 4Life™ Research President, David Lisonbee, found Transfer Factor™ more than two years ago, he knew he had found something very special. Results received by 4Life™ from an independent laboratory this week further substantiate the many studies and clinical experiences which show the benefit of 4Life™ Transfer Factor™ and Transfer Factor Plus™ to significantly boost immune response.

This latest study reports that 4Life™ Transfer Factor™ and Transfer Factor Plus™ “induced immune-based killing of K562 cancer cells at a level unprecedented in our experience or known in medical research,” according to the director of the laboratory.

4Life™ Transfer Factor™ and Transfer Factor Plus™ were tested for their ability to increase Natural Killer Cell (NK) activity by killing live cancer cells. The test results showed that 4Life™ Transfer Factor™ boosted NK cell activity 103% above normal immune response without supplementation, or about two times higher than the next highest product. In addition, it was revealed that Transfer Factor Plus™ increased the NK cell activity 248% above normal immune response without supplementation, or about five times higher than any of the other previously tested products. The best of more than 200 other products tested showed an increase of only 48.6%. (See chart page 2)

Natural Killer Cells are a critical part in the first line of defense against germs. They seek and destroy infected or malignant cells through direct contact. NK cells are very important in fighting cancer cells and cells infected by viruses (colds/flu). The independent laboratory which conducted the study, The Institute of Longevity Medicine in California, is recognized for its research and expertise in measuring the ability of ingredients to significantly boost the immune system.

The results come as no surprise to 4Life™ Research’s Dr. William Hennen, Vice President of Research and Development. “Natural Killer Cells are a critical part of our immune system defenses. The results of the NK cell activity tests clearly demonstrate one of the mechanisms whereby 4Life™ Transfer Factor™ and Transfer Factor Plus™ strengthens and supports the immune system. We believe that enhancement of Natural Killer Cell activity is only one of the many ways 4Life™ Transfer Factor™ benefits the immune system,” said Dr. Hennen.

“I have followed the benefits of transfer factor in the medical literature for many years now. The strong results of commercial (4Life™) Transfer Factor™ under standard pharmaceutical testing protocols demonstrated that the commercial (4Life™) Transfer Factor™ has great potential for widespread benefits. Further, 4Life™ Transfer Factor™ and Transfer Factor Plus™ showed no toxicity even at the highest levels tested, thus maintaining the safety profile of research-grade transfer factor,” according to the laboratory director.

David Lisonbee, President of 4Life™ Research, in response to this research said, “These recent findings support and substantiate the reports from thousands of distributors who use Transfer Factor™ and Transfer Factor Plus™ and the many other clinical experiences and other studies we are familiar with.”

# Nutraceutical Induced Increase in Natural Killer Cell (NK) Activity

**Purpose of Study:** To determine the in vitro Natural Killer Cell (NK) activation effects of 4Life™ Transfer Factor™ and Transfer Factor Plus™ using peripheral blood mononuclear cells (PBMC) isolated from human volunteers and assaying the increased ability of the NK cell population to kill K562 erythroleukemic (leukemia) cells.

**Conclusions:** 4Life™ Transfer Factor™ and Transfer Factor Plus™ induced immune-based lysis (breakdown) of K562 cells at a level unprecedented in the director's experience or in known medical literature. Since NK cell function is so crucial in killing dangerous cells, these products are ideal candidates for human and animal immune support.

Nutraceutical Tested	Percent (%) Rise in NK Cell Activity Over Baseline
4Life™ Transfer Factor Plus™	248%
4Life™ Transfer Factor™	103%
IP6 (highest of group previously tested)	49%
Plant Polysaccharide Formula	48%
Echinacea	43%
Shiitake Mushroom	42%
Cordyceps Formula	28%
Bovine Colostrum	23%
Phytonutrient Formula with Garlic	21%
Endocrine System Formula	16%
Aloe Vera Concentrate (acemannan)	15%
Noni (Morinda citrifolia)	15%

Some of these products reflect an average of different brands.

Baseline activity is the measure of the ability of human white blood cells to kill K562 leukemia (cancer) cells without supplementation.

Natural Killer Cells are the body's first line of defense against cancers and viruses.

The increase in the ability of white blood cells to kill K562 cancer cells is directly related to the increase in Natural Killer Cell activity.

This study was conducted by the Institute of Longevity Medicine in California, and is recognized for its research and expertise in measuring the ability of ingredients to significantly boost the immune system.

*This News Alert does not claim nor should it be interpreted to cure, prevent or mitigate any serious disease. The results have been reported as they were received. If you have a serious illness, see your health professional before beginning any new regimen.*