

T.A. SCIENCES®

CELL REJUVENATION THROUGH TELOMERASE ACTIVATION



T.A. SCIENCES®

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INTRODUCING

TA⁶⁵ MD

THE WORLD'S ONLY TELOMERASE ACTIVATOR

Now clinically proven to **lengthen** critically short telomeres and **restore** the aging immune system.

OUR MISSION IS TO MINIMIZE THE DECLINE ASSOCIATED WITH AGING AND MAXIMIZE THE POTENTIAL FOR HEALTH AND LONGEVITY THROUGH TELOMERASE ACTIVATION

What is TA-65 MD?

TA-65 MD is the only scientifically-proven Telomerase Activator in the world available to the public. It is a highly purified and naturally occurring single molecule from the astragalus plant. It activates (transiently) the telomerase enzyme which can lengthen telomeres. Safe and efficacious with over 8 years of testing; it is only available through physicians trained and licensed by T.A. Sciences.



We are committed to the science and the promise of Telomere Biology: science that holds such promise that it won the **Nobel Prize** in 2009.



“...telomere shortening could be the reason for aging, not only in the individual cells but also in the organism as a whole... These discoveries have added a new dimension to our understanding of the cell, shed light on disease mechanisms, and stimulated the development of potential new therapies.”

Nobel Prize Committee Press Release



“After 9 months of taking TA-65, I am very pleased: Not one bad day and incredible feeling of well-being, darker and thicker hair, smoother and younger looking skin. I just feel younger and more energetic. At 69 I am passing for 55 or below.” Bob W. 69, Seattle, WA

“I’m more active physically than any time I can remember. At age 80 I feel like the “poster boy” for TA Sciences.” Ralph A. 80, Los Angeles, CA

“As a practicing MD, I am surprised at the improvement in my immune system after only 6 months.” Dr. Fred Vagnini, 70, New York, NY

“My eye doctor says he’s never seen the accumulative reserve increase in someone my age. It only goes down with time.” Bill Turon, 64, Berkley Hts, NJ

“I was already a competitive athlete when I began the Patton Protocol. My regular 30-mile bike ride with a 4000 foot climb –took me 2 hours and 20 minutes. After 3 months on TA-65® it went down to 2 hours...” Shelby Blackburn, 45, Redwood City, CA

“For the first time in more than almost five years I can smell again. ...I can smell dinner cooking and I can tell whether it’s chicken or fish. ...It probably doesn’t mean much, but it sure pleases me!” Ralph A. 82, Calabasas, CA

“Going on TA-65 is the best 50th birthday gift I could have given myself. I just spent the weekend skiing and I did more than 20 runs in one day. A year ago that would have been unheard of. My knees didn’t bother me and I had plenty of energy. I can’t wait for my parents to get on the program...” Steve P., 50, New York, NY

REASONS WHY YOU SHOULD OFFER TA-65 MD TO YOUR PATIENTS:

1. There is a growing body of evidence associating most age-related problems with short telomeres.
2. This same body of evidence also clearly establishes that people with long telomeres age healthier and look younger.
3. As we age our telomeres shorten.
4. Exercising and healthy habits over an extended period of time can slow the attrition of telomeres, but telomere length continually declines as we age.
5. People who have not led a healthy lifestyle have accelerated the decline of their telomere lengths, and most likely will suffer premature aging and associated deterioration.
6. The only way to lengthen telomeres is through the activation of an enzyme called telomerase.
7. Currently the only commercially available way to activate telomerase is by taking TA-65 MD.

HOW DO I BECOME A TA SCIENCES LICENSEE?

1. The physician must sign the Licensee Agreement.
2. There is a one time \$1,000 Administrative Fee that covers licensee set-up, marketing support and operations support.
3. The physician must study the Doctor's Manual and pass the Telomere/Telomerase basic knowledge exam.

Your practice will then have the ability to purchase TA-65 MD - and Support Packs, along with Telomere Length and Specialized Immunology tests at licensee discount rates. Cash Flow positive for the licensee: No investment in inventory is required. Patients pay for TA-65 MD before you have to pay TA Sciences. Set your practice apart by offering the only scientifically proven Telomerase Activator in the world to your patients.

For more information, contact our offices (212) 588-8805 or email tasciences@tasciences.com

WHAT ARE SOME OF THE MOST IMPORTANT THINGS I CAN DO FOR MY PATIENTS?

Teach them the importance of diet, exercise, and stress reduction; encourage them to take action before they have symptoms and be proactive about disease prevention; recommend testing telomere lengths, and when appropriate, recommend taking the world's only telomerase activator, TA-65 MD.

Highly respected telomere biologist, Bill Andrews says:

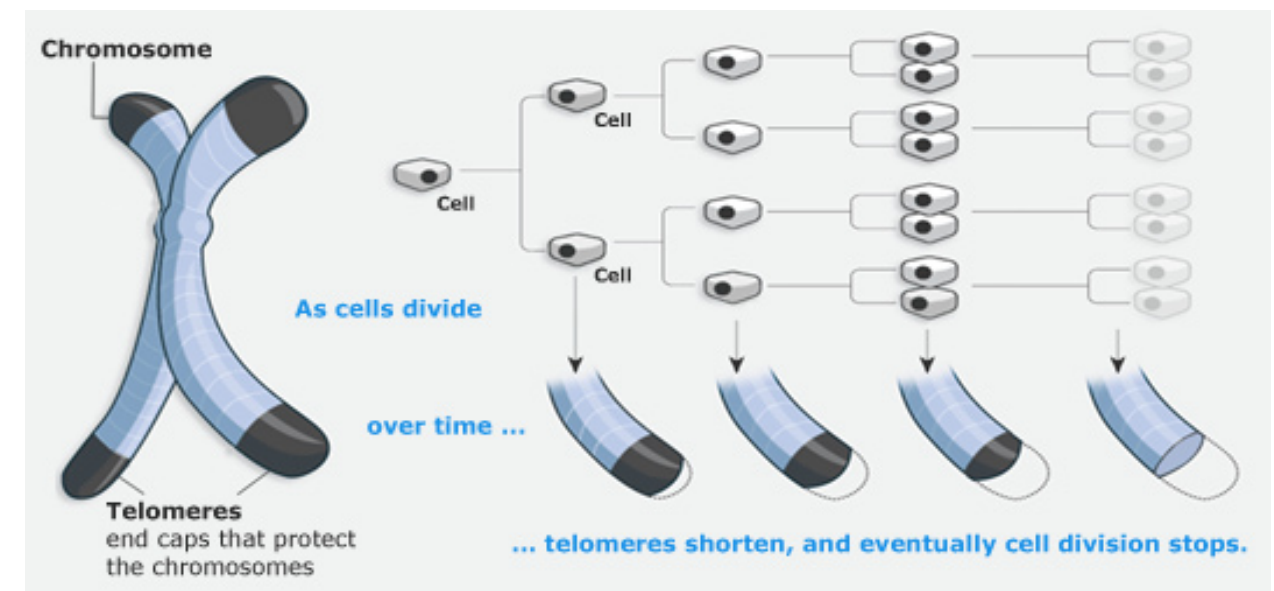
"Control of telomere length may be the most important step in eliminating the 125-year limit on our lifespan and taking the first crucial steps toward allowing us to live young, healthy lives."

Humans gradually lose their youth and vitality as their cells experience age related decline and deterioration. Every human cell contains 92 ticking clocks called telomeres. Telomeres are located at both ends of the 23 pairs of chromosomes that we have inherited from our parents. Telomeres are responsible for maintaining the integrity of our DNA. Each and every time our cells divide, these 92 ticking clocks (some call them burning fuses) get shorter, until one of them becomes critically short and the cell either stops functioning properly or dies. Telomere shortening proceeds inexorably as we grow older and is further accentuated by environmental, physical, and emotional stress. Telomere biology won the Nobel Prize in 2009 and for good reason; if every disease known to mankind is cured, we will still all die from telomere shortening.

Short Telomeres are associated with unhealthy aging and a shorter lifespan

"Telomeres form the ends of human chromosomes. Telomeres shorten with each round of cell division and this mechanism limits proliferation of human cells to a finite number of cell divisions by inducing replicative senescence, differentiation, or apoptosis. Telomere shortening also limits stem cell function, regeneration, and organ maintenance during aging. Moreover, telomere shortening during aging and decline is associated with increasing risks, telomere shortening and aging"

H. Jiang, Z. Ju, K.L. Rudolph; Z Gerontol Geriat 40:314-324 (2007)



Short Telomeres have been associated with age related decline and dysfunction in the tissues of:

- Immune cells
- Heart (cardiomyocytes)
- Hematopoietic stem cells
- Lung alveolar cells
- Skin (dermis, epidermis, vasculature)
- Vascular intima (endothelium)
- Osteoblasts, MSCs
- Liver (hepatocytes)
- Retinal pigmented tissue of eye
- Chondrocytes
- Skeletal muscle
- Kidney (cortex)
- Neurons



TA-65 MD has been shown to **activate telomerase** and **increase telomere length** in humans. This has led to improvements in immune cell function, bone density, and a number of other important age related bio-marker improvements.



*Data published by ourselves and others has indicated that cellular aging caused by shortening telomeres, occurring in numerous tissues throughout the human body, causes or contributes to chronic degeneration. **“Controlled activation of telomerase in normal cells can restore telomere length or slow the rate of loss, improve functional capacity and increase the proliferative lifespan of cells.”** (Geron 10K Report 26 Feb-01)*

WHO TAKES TA-65 MD?

Knowledgeable professionals capable of determining risk/reward ratios. About half of our clients are MD's or Ph.D's and several are well known Telomere Biologists.



WHO SHOULD TAKE TA-65 MD

Anyone over 40 who wants to intervene in age related decline and those who have measured their telomeres and have found them short.

IS TA-65 MD SAFE?

We conducted 5 years of development and safety testing before introducing it to the market. There are currently hundreds of clients taking TA-65, some for over 3 ½ years. Not a single adverse reaction reported by our licensed physicians. Not a single diagnosis of new cancer has been reported. Not a single report of increased cancer load for clients who already had cancer.

WHAT IS THE PATTON PROTOCOL?

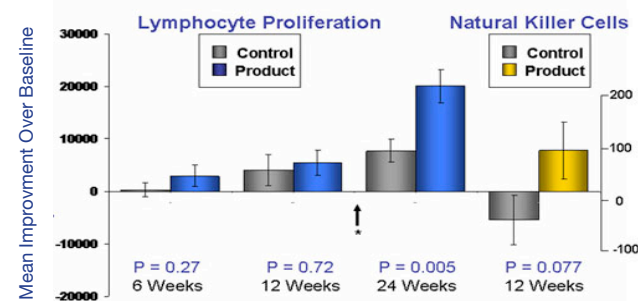
The Patton Protocol was named after Noel Thomas Patton in honor of his contributing to the science of staying young. Mr. Patton is the founder of T.A. Sciences and the first person on the planet to take purified TA-65 long term.

The Patton Protocol has gone through several iterations as a result of Mr. Patton's experience and the information garnered from testing and data from clients since T.A. Sciences® obtained the exclusive license from Geron in 2002.

Generally people take half their daily dose in the morning and the other half in the evening. Out of personal preference, some clients take the entire dose in the morning and others take it all in the evening. We do not have evidence as to which routine is best, but we do recommend that people taking resveratrol, curcumin, or the other possible telomerase inhibitors, take the full dose in the morning/evening and the potential "inhibitors" 12 hours later.

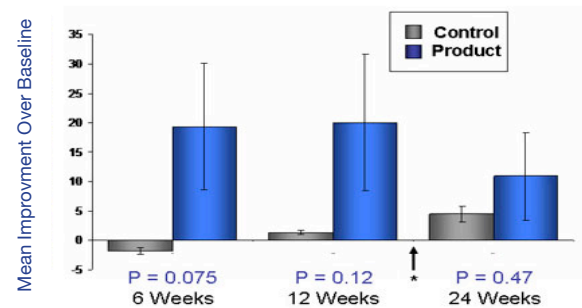
THE GRAPHS BELOW SHOW RESULTS FROM A DOUBLE BLIND, PLACEBO CONTROLLED STUDY IN 2005

Immune System Improvement Summary



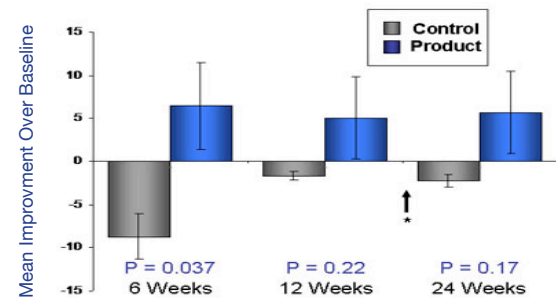
The Y-axis represent the mean changes from baseline in DNA synthesis (3H-thymidine incorporation, dpm) for lymphocyte proliferation, and changes from baseline in NK cell number (CD3-/57+ cells per cubic microliter). Error bars show the standard error of the mean of the control and treatment groups. *Arrow marks the end of treatment at 12 weeks.

Vision Improvement Summary



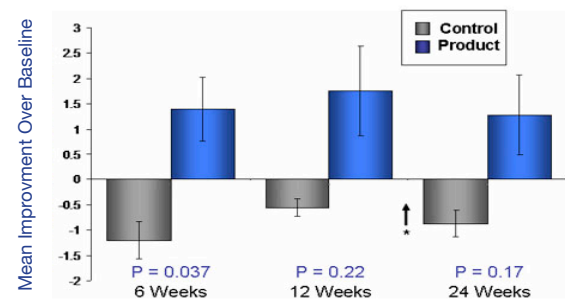
The Y-axis represents the mean change from baseline in vision score (e.g. a change from 20:40 to 20:25 would be a +15 score). Error bars show the standard error of the mean of the control and treatment groups. *Arrow marks the end of treatment at 12 weeks.

Skin Improvement Summary



The Y-axis represents the mean change from baseline in skin score (subjective measures across multiple variables on a 0-9 scale). Error bars show the standard error of the mean of the control and treatment groups. *Arrow marks the end of treatment at 12 weeks.

Sex Improvement Summary



The Y-axis represents the mean change from baseline in two subjective sexual function scores (sexual ability and satisfaction, both on a 0-9 scale). Error bars show the standard error of the mean of the control and treatment groups. *Arrow marks the end of treatment at 12 weeks.

In addition to the above 2005 study, below are results from the 2010 peer reviewed study 'A Natural Product Telomerase Activator as Part of a Health Maintenance Program':

Lengthening of the Shortest Telomeres (These are the ones that really matter; it only takes one short telomere out of the 92 in every cell to send a cell into crisis.)

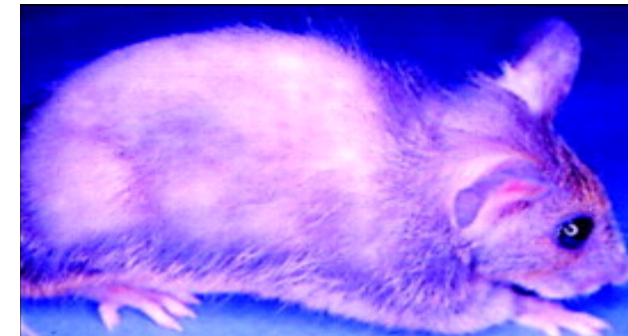
Improved Immune system (In particular, the percentage and absolute number of senescent CD8+/28- cells has significantly decreased. This is a reversal of what normally happens with age.)

Improved bone density

Improved cardiovascular and hormonal biomarkers that normally show decline with age.

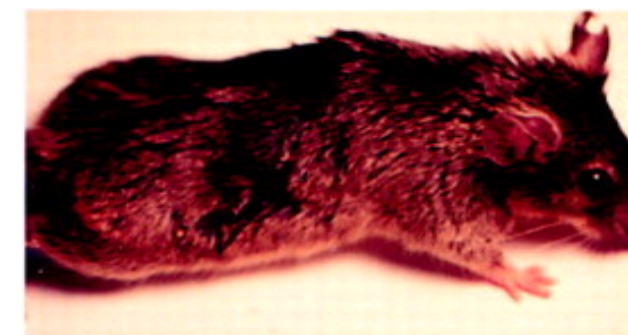
There are also anecdotal results, such as **improved energy** and **athletic performance**, but these effects are not universal and vary among individuals.

TELOMERASE IMPACTS ON AGE RELATED DECLINE IN MICE OF THE SAME AGE:



Telomerase Null/Short telomeres

- Gray and Thinning Hair
- Weakened Immune System
- Intestinal Atrophy
- Reduced Spleen Size
- Decreased Lifespan



Activated Telomerase/Long telomeres

- Healthy and Thriving

LONG TELOMERES ARE ASSOCIATED WITH HEALTHY AGING AND LONGEVITY

"As we suspected, humans of exceptional longevity are better able to maintain the length of their telomeres," said Youstin Suh, Ph.D., associate professor of medicine and of genetics at Albert Einstein College of Medicine (NYC) in a published 2009 study. "And we found that they owe their longevity, at least in part, to advantageous variants of genes involved in telomere maintenance. More specifically, the researchers found that participants who have lived to a very old age have inherited mutant genes that make their telomerase-making system extra active and able to maintain telomere length more effectively." Youstin Suh, Ph.D. Genetic Variation in Human Telomerase is Associated with Telomere Length in Ashkenazi Centenarians.

Most of us are not lucky enough to have inherited such "mutant centenarian genes" to activate telomerase, but we can take TA-65 MD to increase telomerase!

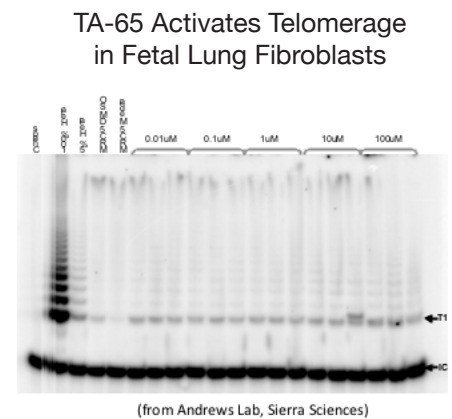
TA-65 has been proven by two independent research laboratories to activate telomerase.

At leading biotech company Geron, Chief Researcher Calvin Harley demonstrated that TA-65 induced telomerase activity transiently in neonatal keratinocytes. TA-65 accelerated wound healing in mid-passage keratinocytes, and TA-65 activated telomerase in fetal lung fibroblasts.

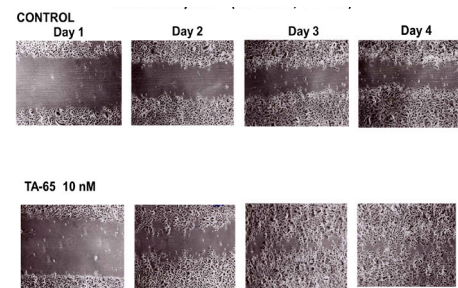
Bill Andrews and his lab at Sierra Sciences showed telomerase transiently activated by TA-65 in fetal lung fibroblasts.

These findings confirm the claims that TA-65 transiently activates telomerase. It is widely accepted in the scientific community that the only way to lengthen telomeres is through activating telomerase. It is also widely accepted that individuals with long telomeres are healthier and live longer.

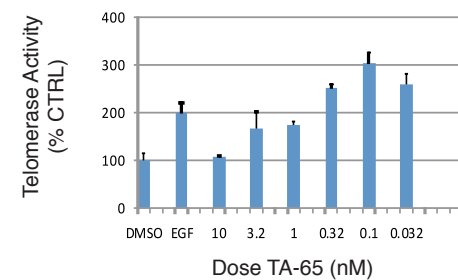
“Data from tissue culture studies showed that one such lead compound significantly activates telomerase and improves replicative capacity and function, including anti-viral activity in CD8+ T-cells published in the Journal of Immunology in 2008.”



TA-65 Accelerates Wound Healing in Mid-Passage Keratinocytes (HEKn-P, PD14)



TA-65 Activate Telomerase in the Human Neonatal Keratinocytes



TRAP Assay Results from Harley Lab, Geron Corp.

TA-65 is a purified small molecule telomerase activator extracted from a plant, commonly used in Chinese medicine, called Astragalus. In laboratory studies using human cell lines including fibroblast cells which normally do not express any telomerase, TA-65 was shown to unequivocally lengthen telomeres. TA-65 is the first and only commercially available telomerase activator that is safe for human consumption.

Each batch of TA-65 starts with 3 tons of astragalus root grown in a specific region of Inner Mongolia. Through a closely guarded proprietary process, a single molecule (TA-65) is extracted from the astragalus root and purified to a very high degree. There are no other similar preparations available on the market.

The images at right show the above ground astragalus and the root. TA-65 is an ultra-purification of one of the more than 2000 bioactive compounds found in the astragalus root.



Astragalus Root

Astragalus Plant

‘Genetic Variation in Human Telomerase is Associated with Telomere Length in Ashkenazi Centenarians’

“Our findings suggest that telomere length and variants of telomerase genes combine to help people live very long lives, perhaps by protecting them from the diseases of old age,” says Dr. Suh. “We’re now trying to understand the mechanism by which these genetic variants of telomerase maintain telomere length in centenarians. Ultimately, it may be possible to develop drugs that mimic the telomerase that our centenarians have been blessed with.”

What this quote, from a study at the Albert Einstein College of Medicine of Yeshiva University, means is that people who lived to be over 100 had more telomerase and accordingly longer telomeres than people who had died earlier.