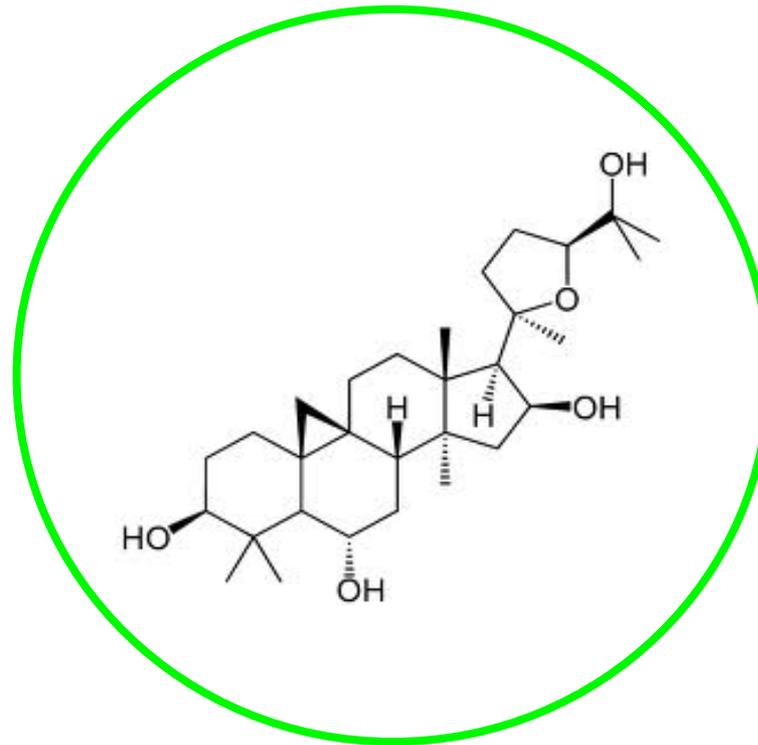


Telostep

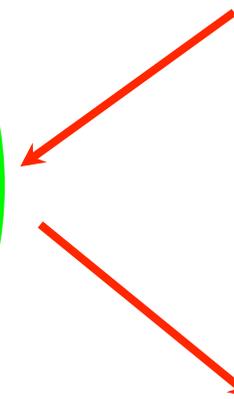
Cost Effective Telomerase Activation

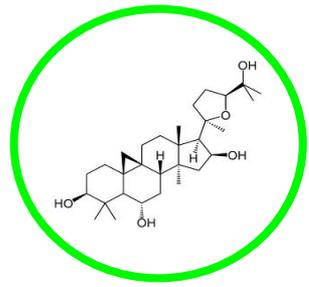
November 2013

Patent
Pending



Gastric Acid





Telostep Makes the Best Anti-Aging Ingredient Less Expensive

Telomere loss is the body's natural aging clock

Cycloastragenol is proven to be the most effective ingredient for reversing that clock and adding to telomere length

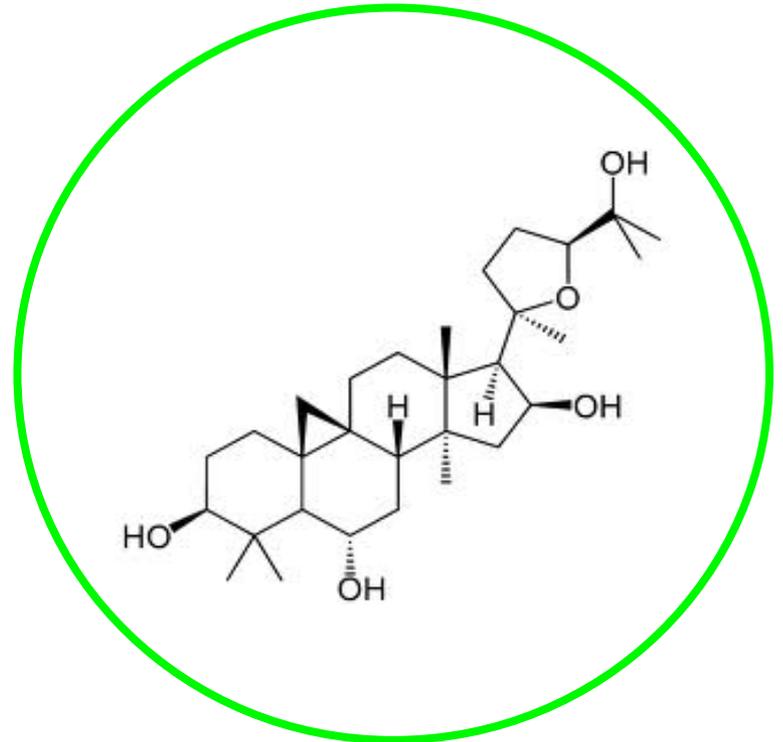
Some ingredients may target easing aging in one specific body part, but cycloastragenol reverses aging throughout the body

On the market since 2007, it has gained a reputation as the most effective supplement for anti-aging

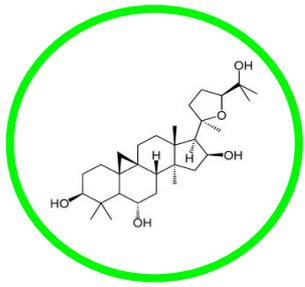
What holds it back from mass use is its high cost

Telostep protects cycloastragenol from destruction in the digestive system – lowering cost by 3X

Gastric Acid



Patent Pending



There is a Large Market Opportunity for a Low Cost Telomerase Activator

The high price of TA-65 (containing cycloastragenol), \$10k per person per year, keeps the customer base down to 20,000

Even this represents \$200 million in annual sales

Product B was developed by an independent lab and licensed by multilevel marketer Isagenix

Product B reduces the rate of telomere loss but does not add to telomere length significantly compared to TA-65

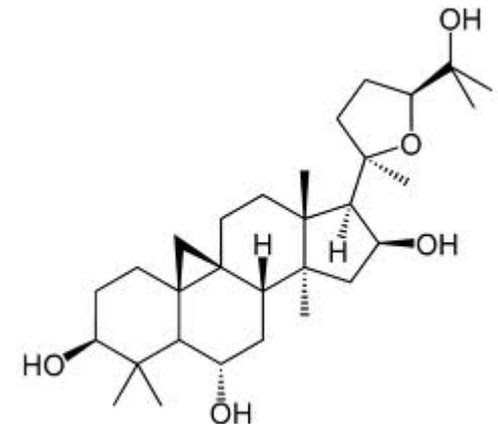
Isagenix made Product B their flagship product and has done \$1 billion in their line over the last 3.5 years

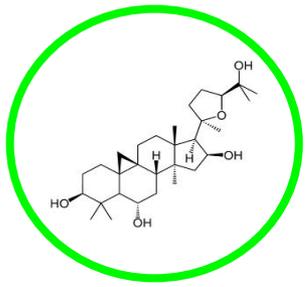
Several other brands also sell cycloastragenol and/or telomere loss slowing products

Cycloastragenol is expensive: it takes 1000 pounds of astragalus root to make a one year supply for one person



Processing costs





Telomeres Are the Aging Clock

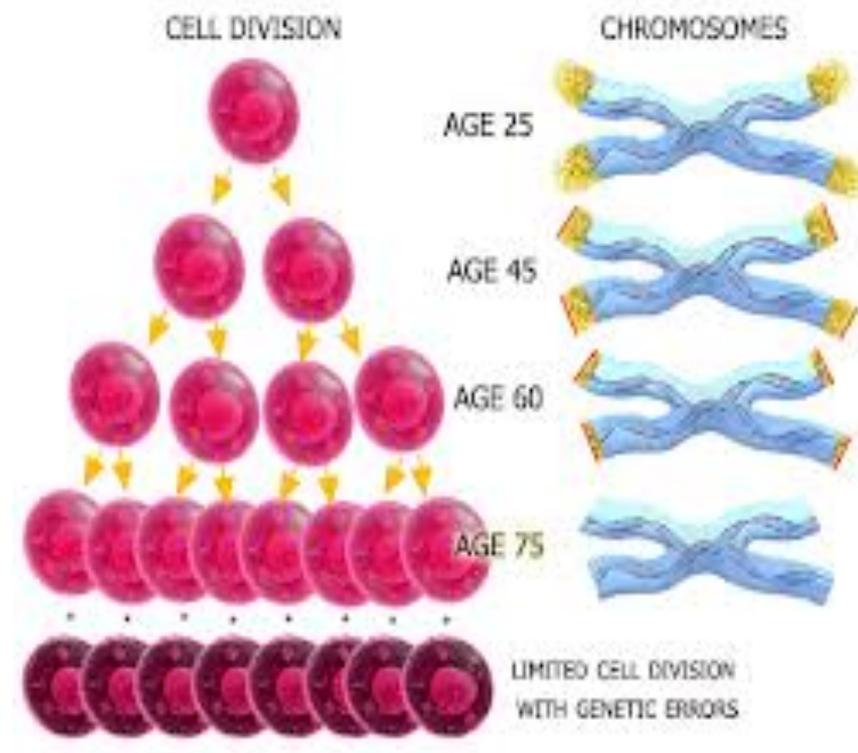
In 1961 Leonard Hayflick discovered cells only divide 30 to 90 times and then stop (the Hayflick Limit)

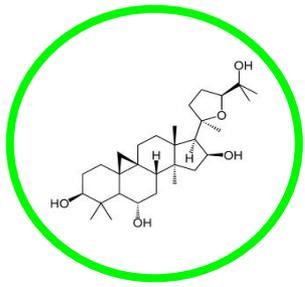
Telomeres are protective end caps on DNA strands which repeat the message TTAGGG

With each cell division sacrificial telomeres are lost

When we run out of telomeres cell division stops and cell populations are depleted

Telomere loss is one of the main cases of aging





The Telomerase Enzyme Can Add Back Telomere Length

In the 1970's Elizabeth Blackburn discovered an enzyme called telomerase that can add telomeres back onto the DNA ends

In 2009 she won the Nobel Prize for this discovery

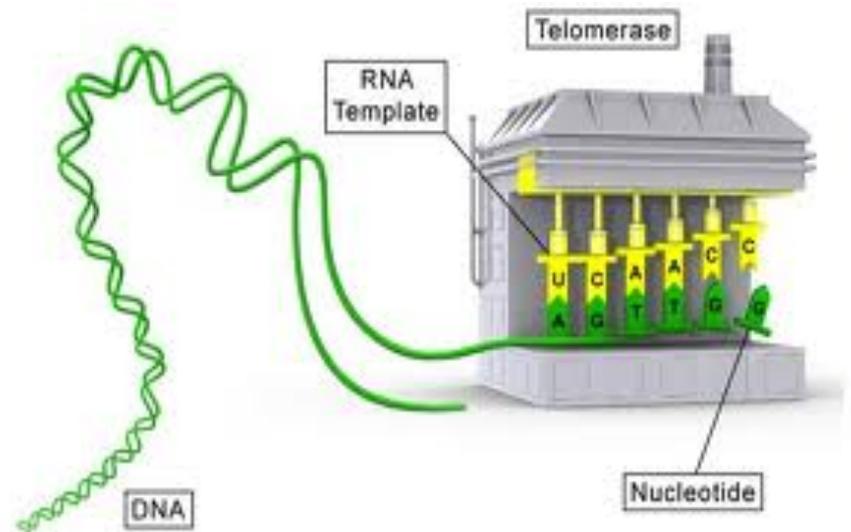
In between generations this enzyme resets telomere length

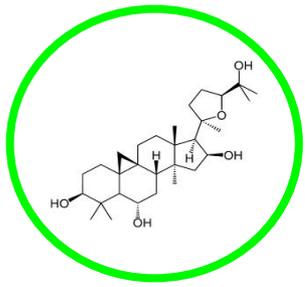
But in most adult cells it is not produced

Cycloastragenol triggers the cell to produce telomerase

**In 2005 human testing began with TA-65
(containing cycloastragenol)**

In 2007 TA-65 entered the market





The Harvard Mouse Study Showed Telomerase Reversing Many Effects of Aging

In 2010 a group of researchers at Harvard and 2 cancer research agencies completed an historic study

Mice were aged to the equivalent of 80 year old humans with disabled telomerase production

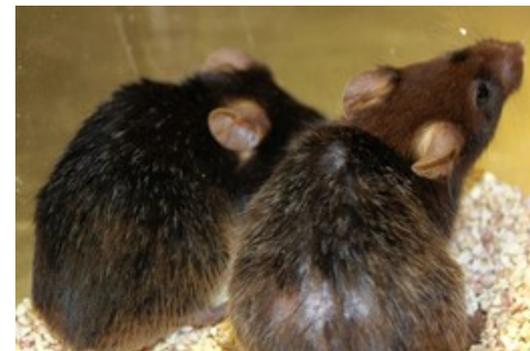
The mice were then modified to produce telomerase in each cell for 30 days, equivalent to 2.5 human years

Their organs: spleen, liver, testes, intestines, etc., grew back to youthful size and function

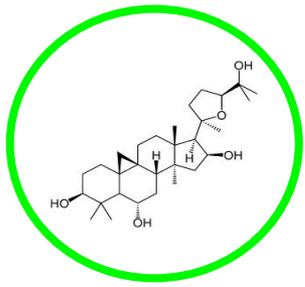
Hair turned from gray to brown, nervous system and mental function returned

Brains grew from an shrunken 75% size to a youthful 100% size

**Telomerase
Mouse**



**No Telomerase
Mouse**



The Blasco Study Found that Mice with Telomerase Live 12% to 24% Longer

Some criticized the Harvard study for using genetically modified mice so the study was repeated using naturally aged mice by Maria Blasco at the Spanish National Cancer Research Institute in 2012

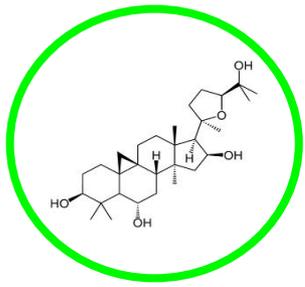
The telomerase mice had more youthful muscle, nerves and organs compared to untreated mice of the same age

Mental function and coordination were superior

Cancer rates were the same or less

Most importantly, the telomerase mice lived 12% to 24% longer





Short Telomere Length Has Been Linked to Disease and Shorter Lifespan in Many Human Studies

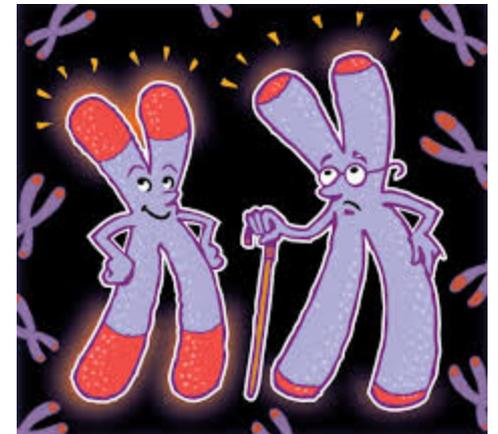
Numerous studies link higher disease rates for almost every major disease to shorter telomere length

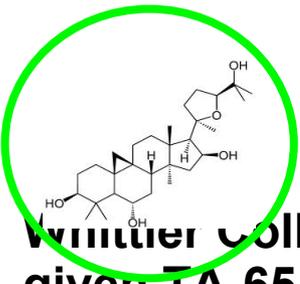
Many studies have shown longer lifespans correlated to longer telomere length

In 2013 a study lead by the British NIHR involving 48,000 people found that short telomeres **cause** higher rates of cancer, MS, celiac disease and heart disease
- not just a casual link

When a cell runs out of telomeres it can commit suicide, go into a zombie-like senescent state or go cancerous

Senescent cells are dysfunctional and bring down the cells around them





Test Results for TA-65 Very Impressive in Humans, Mice and Cells

Whittier College and UCLA found that individual human cells given TA-65 produced higher levels of telomerase and underwent cell division more times, in excess of the Hayflick Limit

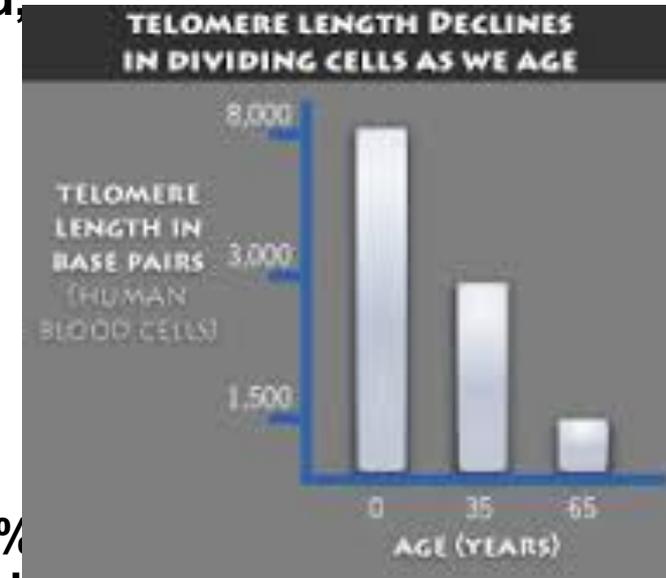
Blasco tested TA-65 in mice and found telomerase produced, telomeres lengthened, fewer senescent cells and lifespan increased with no higher levels of cancer

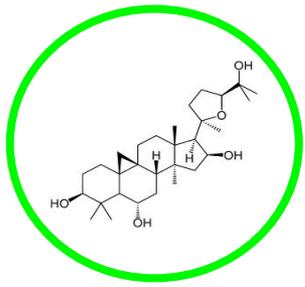
TA-65 funded studies showed humans significantly decreasing the % of telomeres under 3000 base pairs

TA-65 disproportionately increased the short telomeres, avoiding senescence and allowing cell division to continue

The key marker of telomerase production is decreasing the % of short telomeres (those under 3000 base pairs) as opposed to increasing the average telomere length

A 2013 study showed improvements instead of declines in blood pressure, cholesterol and insulin levels over a 2.5 year period of taking TA-65





People Taking TA-65 Report Experienced Benefits

Many, but not all, people taking TA-65 report improvements in health and function

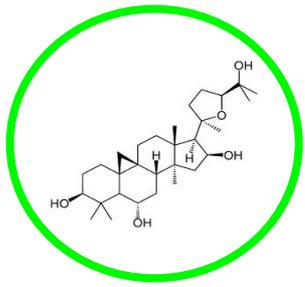
Which benefits a particular person experiences may depend on how much a particular body part is telomere limited due to genetics, local injuries, age and other life experiences

Frequently reported benefits include: improved immune system function, improved vision, improved hearing, improved sexual function, more youthful skin, improved cardiovascular fitness, better sleep, more flexible skin, more flexible joints, reduction in age spots, better concentration, better mood, more energy, fewer pains, better hair health, and others

What other product can deliver all this?



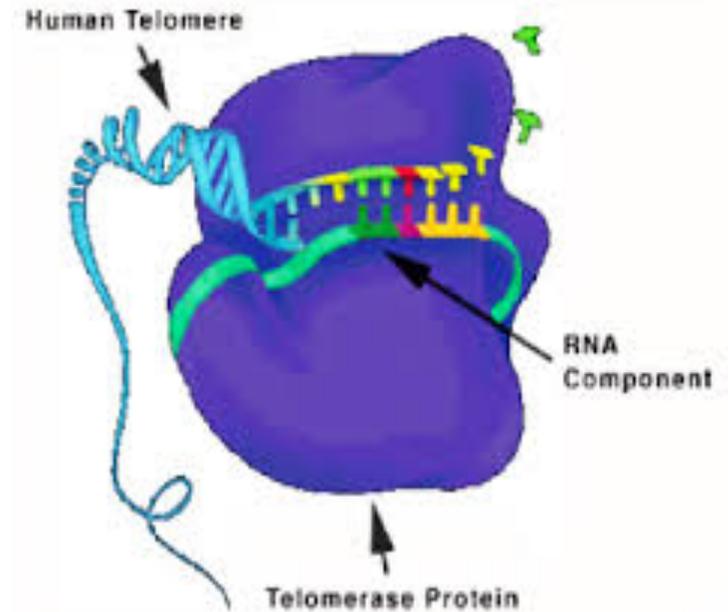
**3D Model of
Telomerase
by UCLA**

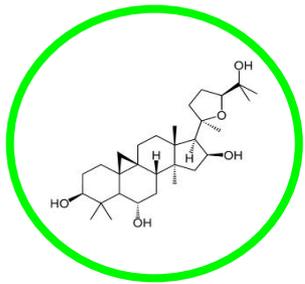


Proof of Concept Testing of Telostep Shows Similar Benefits with Less Active Ingredient

Even with 1/3 the amount of active ingredient, Telostep gave similar reported benefits to TA-65

Participants reported: improved immune system function, improved vision, improved hearing, improved sexual function, more youthful skin, improved cardiovascular fitness, better sleep, more flexible skin, more flexible joints, reduction in age spots, better concentration, better mood, more energy, fewer pains, better hair health, and others





Telostep Delivers More Active Ingredient to the Cells

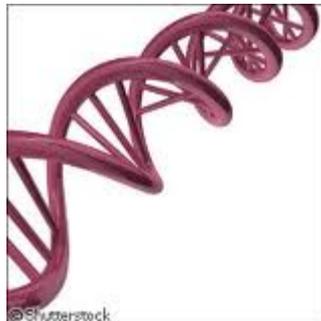
The main purpose of gastric acid in the stomach is to begin the digestive process by breaking down long molecule proteins, such as cycloastragenol

Tests with omega-3 (which has weak telomerase activation) and other long molecule proteins show that 3 to 10 times more of the active ingredient swallowed makes it to the bloodstream if the active ingredient is protected from gastric acid via an enteric coating

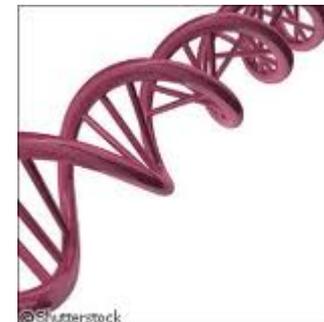
What a telomerase activator does is to locate onto a certain site on the DNA next to the telomerase production site and turn on an epigenetic switch to make telomerase

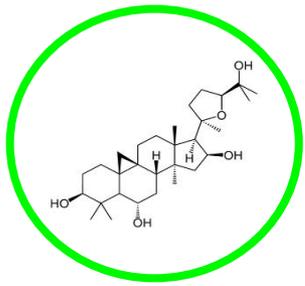
The activator thus needs to be a certain shape and size molecule (which means acid vulnerable bonds) to fit like a key in this lock

Recognizing this, the Telostep patent claims an enteric coating protecting any telomerase production activator and should be useful even with yet to be discovered activators



Telostep





Telostep Can Make Telomere Extension Affordable

A 2013 study by the Ben-Gurion University of the Negev in Israel looked at aging in different animals and concluded that 33% of aging was due to telomere shortening

Telomere shortening is not the only cause of aging, but it is a major cause

To date only a select few have been able to afford to extend their lifespans via telomerase activation

Telostep will now open that market up

**12% to 24%
Increase in
Lifespan in
Mice**

