Astragalus IV Studied for its Anti-Aging Potential

A little-known compound found in certain species of shrubs has scientists fascinated : could it be the fountain of youth that humanity has been longing to find for millenia?

Astragaloside IV : An Anti-Aging Miracle?

Astragaloside IV is a saponin extracted from the root of *Astralagus membranaceus.* Recent studies have shown that Astragaloside IV may have a strong anti-aging potential by preserving telomere integrity and actively destroying free radicals that lead to cell damage.[1,2] Telomeres are protective structures on the end of each chromosome. Recent research has found that the length of telomeres influences the aging process and likely play a role in age-related diseases such as Alzheimer's Disease, osteoporosis and cancer.[3] Cells multiply by replicating their DNA to form new cells. When the DNA strands split to create copies of themselves, the process damages the genetic material a little every time and the strands can eventually be pulled apart, leading to all kinds of dysfunctional cells. Telomeres cap the ends of DNA strands to help prevent them from being pulled apart but over time, telomeres shorten as a result of normal DNA replication and oxidative damage, preventing them from effectively playing their role of protecting DNA integrity.[4]

To counter this effect, our bodies naturally have a telomere-preserving enzyme called telomerase. Its role is to regenerate telomeres as they shorten in order to maintain their protective effect against cell degeneration. However, most cells lack sufficient telomerase to counteract the effects of free radicals and oxidative stress and thus telomeres are gradually destroyed.[5] This leads to the common signs of aging — disease, reduced tissue regeneration and loss of tissue function. Stress can greatly accelerate this process.[1]

Not only does telomerase activation prevent age-related cell and tissue degeneration, studies have also found that it helps reverse it.[4] This is huge — if we could find a way to scientifically create a powerful telomerase activator, telomeres would never get short enough to allow cell replication and oxidation to damage the cell's DNA. With perfectly undamaged DNA, we could potentially extend our lifespan by a significant amount. As we know, aging is related to the degeneration of cells and tissue that can no longer perform their function adequately. If increasing telomerase activity allows the regeneration of dying or damaged cells, we could very well see the beginning of a new era in terms of regenerative medicine. Recent studies are showing that we may be on the right track with Astragaloside IV.

What Science Has Discovered About Astragaloside IV

Breakthrough research has indicated that Astragaloside IV counteracts cell aging by activating telomerase, thus increasing the rate of telomere regeneration. A study reported that 40% of subjects showed an increase in mean telomere length after one year of taking an Astragaloside IV supplement. Furthermore, telomerase seems to act primarily on the shortest telomeres. This is significant because the shortest telomeres are usually the ones that become dysfunctional. Increased telomerase activity could therefore contribute to maintaining a minimal telomere length in order to prevent tissue degeneration.[1] A brand-new study has also been able to prove that Astragaloside IV has enough telomerase activation power to restore a more youthful cell profile by reducing the overall amount of cells with very short or damaged telomeres.[4]

Another study examined the relationship between Astragaloside IV and free radical damage to determine its potential use as a treatment for multiple sclerosis. This study found that Astragaloside had a strong antioxidant action by neutralizing free radicals and increasing the levels of antioxidant enzymes.[6] Free radicals are unstable molecules that are formed when atoms containing weak bonds are split, often during normal metabolism or as a result of stress. Because of their unstable nature, free radicals seek to bond with electrons from surrounding molecules, creating more free radicals. This process is called oxidation. Eventually, this leads to the disruption of normal biological processes and accelerates cell aging by destroying telomeres. Antioxidants are stable compounds that neutralize free radicals by scavenging unstable molecules and freely offering an electron to stabilize them, effectively ending the free radical creation chain.[7]

These studies suggest that Astragaloside IV has a dual action in telomere preservation. On one hand, its telomerase activating properties help lengthen the shortest telomeres on each chromosome, preventing them from becoming too short and dysfunctional. Furthermore, its oxidation-fighting action contributes to the prevention of free radical damage to telomeres and other cell components. Because telomere length is thought to be a major factor in the prevention of cell degeneration associated with aging, research surrounding Astragaloside IV as an anti-aging compound seems very promising.

Astragaloside IV and Disease Prevention

Many age-related diseases are directly related to the loss of telomere integrity and free radical damage. For example, multiple sclerosis and dementia (Alzheimer’s disease) are the result of

nerve and tissue destruction. Cancer is caused by the rapid replication of abnormal cells, which are probably created from oxidation damage. Hepatitis, cirrhosis and liver failure are also linked to the loss of normal tissue function. Astragaloside IV plays a role in the prevention of these diseases and many other conditions by contributing to the preservation of cell integrity on a microscopic level. Studies are currently being conducted on this potentially powerful age-fighting compound in order to reduce the effects of aging on humans. With more research, could it be possible that humans will soon find a way to preserve their physical and mental capacities for an extra few decades?

Looking and Feeling 25 Forever?

A clinical experiment on mice revealed that activating telomerase appeared to make the subjects age backwards, repairing their tissues and even regenerating neurons.[8] Neurons are key components of the nervous system and are the only cells in the body that do not naturally replicate — we are born with a set number of neurons. As they get damaged, they eventually die and do not get replaced. In another experiment, scientists discovered that a topical gel enriched with Astragalus IV helped with collagen formation, wound healing and dramatically improved the appearance of scars.[9] Since wrinkles and aging skin come from the loss of collagen throughout the years, could it be possible that we have potentially discovered a way to look youthful and have the sharp memory of a young adult well into our advanced decades? This is what scientists are currently attempting to find out.

Despite the many questions that remain, one thing is certain: Astragaloside IV has great scientific and medical potential. Many studies already account for its extraordinary effects on human health, and the future will eventually reveal if we have finally found the cure against aging. With the thriving market for anti-aging supplements, it is reasonable to think that a natural, convenient plant extract against aging would get great reception from the general public and would potentially help everyone enjoy a longer, healthier life.

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