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File: ■ Astragalus (*Astragalus membranaceus*, Fabaceae)
■ Grape (*Vitis vinifera*, Vitaceae)
■ Olive (*Olea europaea*, Oleaceae)
■ Telomere Length

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RE: Astragalus Supplement Lengthens Telomeres in Middle-aged Participants; Could Play a Role in Healthy Aging and Longevity

de Jaeger C, Kruiskamp S, Voronska E, et al. A natural astragalus-based nutritional supplement lengthens telomeres in a middle-aged population: A randomized, double-blind, placebo-controlled study. *Nutrients*. September 3, 2024;16(17):2963. doi: 10.3390/nu16172963.

Telomeres are ribonucleoprotein structures that protect the ends of chromosomes from becoming frayed or tangled, helping to maintain the genomic integrity of the cell cycle. As a cell divides, the telomeres shorten. Cells with a critically low telomere length (TL) can no longer divide, and the cell dies. Telomere shortening, which is affected by environmental factors such as diet, physical activity, and lifestyle choices, is associated with age and aging-related diseases such as cancer and cardiovascular disease.

Astragalus (*Astragalus membranaceus*, Fabaceae) contains active compounds such as astragaloside IV and cycloastragenol, which are potent telomerase activators. These authors conducted a randomized, double-blind, placebo-controlled, parallel-group study to investigate the effects of an astragalus-based nutritional supplement, ASTCOQ02 (Laboratoires Fenioux; Brabant Wallan, Belgium), on TL in healthy participants, aiming to validate that the supplement lengthens telomeres in middle-aged individuals.

The study was conducted at the Institute of Medicine and Physiology of Longevity in Paris, France, and included preselection and baseline visits, followed by visits after one month, three months, and six months of treatment. Venous blood samples were collected at each visit, except for the preselection visit. The quantitative fluorescence in situ hybridization technique was used to measure telomere length.

A total of 40 adults (24 females and 16 males) aged 56.1 ± 6.0 years were enrolled in the study; all were ambulatory, physically active, and without any notable medical history. Participants were evenly randomized to the astragalus or placebo group. Both groups were similar in baseline assessments of the percentage of active and retired participants, medical history, body mass index, physical activity, biochemical values, immunological status, and the use of medications and nutritional supplements.

Participants took one study capsule (Long Vie®; Laboratoires Fenioux; Cedex, France) twice daily (morning and evening) for six months. The daily dose of the astragalus

supplement provided 250 mg of astragalus extract (including 40 mg of astragaloside IV and 25 mg of cycloastragenol), 14.46 mg of zinc oxide, 160 mg of grape (*Vitis vinifera*, Vitaceae) seed extract, and 140 mg of olive (*Olea europaea*, Oleaceae) fruit extract (including 28 mg of hydroxytyrosol and its derivatives). Placebo capsules contained excipients only.

All participants completed the study, and no adverse effects were reported. No changes in weight, blood pressure, heart rate, or biological or immunological assessments were detected during the study, and no abnormal electrocardiogram results were recorded.

No significant between-group differences were observed in median TL at baseline. In the placebo group, the median telomere length decreased after one month and remained stable at months 3 and 6 compared to baseline. In the astragalus group, the median telomere length increased compared to baseline beginning at month 1 ($P = 0.3$) and increasing significantly at month 3 ($P = 0.008$) and month 6 ($P = 0.001$).

At baseline, the mean length of short telomeres was higher, although not significantly, in the placebo group compared to the astragalus group. In the placebo group, the mean short telomere length remained stable at months 1, 3, and 6 compared to baseline. In the astragalus group, the median short telomere length increased at month 1 ($P = 0.44$) compared to baseline, with an increase becoming significant at month 3 ($P = 0.029$) and month 6 ($P = 0.006$).

A between-group comparison of the percentage of short telomeres revealed a tendency to decrease in the placebo group and a significant decrease in the astragalus group at month 6 ($P = 0.04$).

Addressing the limitations of this study, the authors acknowledge that because of the study's design, they did not compare the nutrient effect of the astragalus supplement on telomere length, and they did not study the effect of participants' sexual identity. They authors pointed out that females have been observed to have a lower leukocyte telomere length shortening rate compared to males of the same age.

The authors conclude that their findings confirm the ability of the study product to lengthen both median and short telomeres by increasing telomerase activity. The health-promoting effects of the study supplement should be studied further with a focus on healthy aging and increased life expectancy.

The authors declare no conflicts of interest.

—Shari Henson

Referenced article can be accessed at <https://www.mdpi.com/2072-6643/16/17/2963>.