

# Abstract

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## A Natural Product Telomerase Activator As Part of a Health Maintenance Program.

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**OBJECTIVE AND METHODS:** Most human cells lack sufficient telomerase to maintain telomeres, hence these genetic elements shorten with time and stress, contributing to aging and disease. In January, 2007, a commercial health maintenance program, PattonProtocol-1, was launched that included a natural product-derived telomerase activator (TA-65((R)), 10-50 mg daily), a comprehensive dietary supplement pack, and physician counseling/laboratory tests at baseline and every 3-6 months thereafter. We report here analysis of the first year of data focusing on the immune system.

**RESULTS:** Low nanomolar levels of TA-65((R)) moderately activated telomerase in human keratinocytes, fibroblasts, and immune cells in culture; similar plasma levels of TA-65((R)) were achieved in pilot human pharmacokinetic studies with single 10- to 50-mg doses. **The most striking in vivo effects were declines in the percent senescent cytotoxic (CD8(+)/CD28(-) T cells (1.5, 4.4, 8.6, and 7.5% at 3, 6, 9, and 12 months, respectively; p = not significant [N.S.], 0.018, 0.0024, 0.0062) and natural killer cells at 6 and 12 months (p = 0.028 and 0.00013, respectively).** Most of these decreases were seen in cytomegalovirus (CMV) seropositive subjects. In a subset of subjects, the distribution of telomere lengths in leukocytes at baseline and 12 months was measured. Although mean telomere length did not increase, there was a significant reduction in the percent short (<4 kbp) telomeres (p = 0.037). No adverse events were attributed to PattonProtocol-1.

**CONCLUSIONS:** **We conclude that the protocol lengthens critically short telomeres and remodels the relative proportions of circulating leukocytes of CMV(+) subjects toward the more "youthful" profile of CMV(-) subjects.** Controlled randomized trials are planned to assess TA-65((R))-specific effects in humans.

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