

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

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18/10/2013

## Clinical Research

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Harley CB, Liu W, Blasco MA, Vera E, Andrews WH, Briggs LA, Raffaele JM. *Rejuvenation Research*. 2011 February; 14(1): 45—56.

This one year human study showed improvements in telomere length and immune system biomarkers for people taking TA-65® capsules. The study confirmed TA-65®'s previously noted health effects and discovered other areas of whole health support that necessitate further research. The study also looked at the *in vitro* effects of TA-65® on cultured human cells.

**Study Model:** 114 study participants were tested for telomere length and other biomarkers of the aging process both before and during one year of TA-65® administration, with checkpoints at baseline and at 3, 6, 9, and 12 months. Subjects took 5 to 10 mg of TA-65® per day. Health areas that were monitored included: blood count, immune system status and function, CMV status, kidney health, liver health, endocrine function, cholesterol balance, serum nutrient profile, glucose metabolism, inflammatory response, cardiovascular health, bone mineral density, dermal health, vision, and mental acuity, along with overall telomere length. No adverse events were reported by study subjects. The study also explored *in vitro* effects of TA-65®, utilizing cultured human neonatal keratinocytes and fetal fibroblasts.

**Findings, Method of Action:** Multiple *in vitro* experiments confirmed that TA-65® supports enhanced Telomerase-Activation in human cells. Of note is the fact that two and three-fold upregulating effects were seen at very low dosages. Meanwhile, untreated and vehicle-only (DMSO) treated cells showed very weak telomerase activity.

**Findings, Health Effects:** For the sake of studying TA-65®'s immune system effects, CMV status was noted for all participants at study start. CMV+ status is common enough to be considered a normal ubiquitous aspect of the aging process. Telomerase Activation positivity rate was relatively low with this group (54%) while mean age was 63, resulting in a study group that permitted separation of the effects of age and CMV status upon immune cell health.

The most significant findings in this one-year study were clear support for:

- Decreased percentage of short telomeres
- Healthy number of neutrophils among CMV+ subjects
- Reduced percentage of non-functioning senescent cytotoxic T cells
- Overall “more youthful” immune cell profile

**Findings, Safety:** No adverse events were seen, and there were no reports of unregulated cell growth during the study period. Some participants increased their dosage to 25 or 50 mg per day with no adverse effects.