**Anti-Aging**

**Cell Longevity Treatment with a Cdc42 specific inhibitor**

**Brief Description of Technology**
CASIN significantly increases murine lifespan and epigenetic clock.

**Technology Overview**
Cell division control protein 42 homolog, also known as Cdc42, is a protein involved in regulation of the cell cycle. Cell aging may reduce tissue homeostasis and consequently limit lifespan. CASIN inhibits intracellular Cdc42 activity specifically and transiently, regulating multiple functions in eukaryotic cells including aging. Cdc42 is significantly elevated in several tissues of aged mice, while the Cdc42 gain-of-activity mouse model presents with a premature aging-like phenotype with decreased lifespan. These data suggest a causal connection between elevated activity of Cdc42, aging, and reduced lifespan. Aged mice, 75 weeks old, treated with CASIN for 4 consecutive days significantly extended the average and maximum lifespan. A significantly younger epigenetic clock, based upon DNA methylation levels in blood cells was also determined.

**Applications**
- Cosmetic applications for youthful appearance
- Longevity and juvenescence

**Advantages**
- Potentially increased lifespan
- Significantly younger epigenetic clock along with decrease in aging associated cytokines

**Market Overview**
The number of people aged 65 years or older will be 96.2 million by 2050. This growing geriatric population has increased the demand for various types of anti-aging products.

**Investigator Overview**
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