

March 28, 2017



# Cardax Astaxanthin Compound CDX-085 Stimulates Anti-Aging Gene in Mice

***Almost 90% Increase in FOXO3 Gene Expression Demonstrated in University of Hawaii Research***

HONOLULU--(BUSINESS WIRE)-- Cardax, Inc. ("Cardax") (OTCQB:CDXI) and the University of Hawaii ("UH") announced today that Cardax's proprietary astaxanthin compound, CDX-085, demonstrated an almost 90% increase in *FOXO3* gene expression in mice ( $p=0.024$ ).

This research was conducted by UH scientists Dr. Bradley Willcox, M.D., Professor and Director of Research at the Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii ("JABSOM") and Principal Investigator of the NIH-funded Kuakini Hawaii Lifespan and Healthspan Studies, and Dr. Richard Allsopp, Ph.D., Associate Professor, Institute of Biogenesis Research at JABSOM.

Previously in humans, Dr. Willcox and colleagues discovered genetic variants of *FOXO3* in humans that protect against aging (Willcox et al. *Proc US Natl Acad Sci*2008).

- One G allele (GT genotype) – Double the odds to live to 100
- Two G alleles (GG genotype) – Triple the odds to live to 100

This observation has since been replicated in >20 independent studies. At the American Heart Association Meeting in 2015, it was announced that the protective *FOXO3* allele is strongly associated with reduced coronary heart disease mortality ( $p=0.00001$ ) (AHA Meeting 2015) and later published in the leading gerontology journal (Willcox et al. *J Gerontol Biol Med Sci* 2016).

"These results augment earlier findings in the *C. elegans* roundworm, a well-accepted model of aging," said Dr. Allsopp, "where astaxanthin extended lifespan by 16-30%."

"All of us have the *FOXO3* gene, which protects against aging in humans," said Dr. Willcox. "But about one in three persons carry a version of the *FOXO3* gene that is associated with longevity. By activating the *FOXO3* gene common in all humans, we can make it act like the "longevity" version. Through this research, we have shown that astaxanthin activates the *FOXO3* gene."

"This exciting new evidence provides yet another reason for physicians and patients to consider an astaxanthin dietary supplement such as ZanthoSyn as the foundation of an anti-aging, longevity program," said David G. Watumull, Cardax CEO.

**About CDX-085**

CDX-085 is the patented active ingredient of Cardax's second generation product and like its first generation dietary supplement, ZanthoSyn™, delivers astaxanthin to the blood stream with excellent absorption and purity, but in a more concentrated form, allowing higher doses per capsule and improved dosing convenience. Astaxanthin is a safe anti-inflammatory for general health that supports anti-aging and longevity.\*

### **About FOXO3**

FOXO3 is a member of the forkhead family of transcription factors. The human homolog in *C. elegans*, *daf-16*, has profound effects on longevity (Kenyon et al. A *C. elegans* mutant that lives twice as long as wild type. *Nature* 1993). Scientists led by Dr. Bradley Willcox, MD, member of the Cardax scientific advisory board, discovered a genetic variant of FOXO3 in humans that protects against aging (Willcox et al. *Proc US Natl Acad Sci* 2008). This observation has since been replicated in >20 independent studies. The protective FOXO3 allele (G allele) is associated with longevity with one G allele (GT genotype) doubling the odds to live to 100 and two G alleles (GG genotype) tripling the odds to live to 100. The protective FOXO3 allele is strongly associated with reduced coronary heart disease mortality (p=0.00001) (Willcox et al. *AHA Meeting* 2015) and the protective FOXO3 allele is strongly associated with reduced serum inflammatory markers (CRP and TNF-α).

### **About Cardax**

Cardax devotes substantially all of its efforts to developing and commercializing safe anti-inflammatory dietary supplements and drugs. Cardax is initially focusing on astaxanthin, which is a powerful and safe naturally occurring anti-inflammatory without the side effects of currently marketed anti-inflammatories. The safety and efficacy of Cardax's products have not been directly evaluated in clinical trials or confirmed by the FDA.

### **Safe Harbor**

This release may contain certain forward-looking statements regarding our prospective performance and strategies within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. We intend such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995, and are including this statement for purposes of said safe harbor provisions. Forward-looking statements, which are based on certain assumptions and describe future plans, strategies, and expectations of our company, are generally identified by use of words "anticipate," "believe," "estimate," "expect," "intend," "plan," "project," "seek," "strive," "try," or future or conditional verbs such as "could," "may," "should," "will," "would," or similar expressions. Our ability to predict results or the actual effects of our plans or strategies is inherently uncertain. Accordingly, actual results may differ materially from anticipated results. Some of the factors that could cause our actual results to differ from our expectations or beliefs include, without limitation, the risks discussed from time to time in our filings with the Securities and Exchange Commission. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this release. Except as required by applicable law or regulation, we undertake no obligation to update these forward-looking statements to reflect events or circumstances that occur after the date on which such statements were made.

---

**\* These statements have not been evaluated by the Food and Drug Administration.  
This product is not intended to diagnose, treat, cure, or prevent any disease.**

---

View source version on businesswire.com:

<http://www.businesswire.com/news/home/20170328005574/en/>

**Media and Investors**

Cardax, Inc.

Janice Kam, 1 808-457-1400

[press@cardaxpharma.com](mailto:press@cardaxpharma.com)

Source: Cardax, Inc.