

Base Pair Biotechnologies, Inc. and Nexmos Inc. Create the First DNA Aptamers that Inhibit Vitamin C Oxidation

New stabilizers enable cosmetic, nutraceutical and beverage formulations with greater shelf life and efficacy

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Pearland, Texas, U.S.A. and Seoul, South Korea – (PR Newswire) – Base Pair Biotechnologies, Inc., The Aptamer Discovery Company, and Nexmos, Inc., the Aptamer Application R&D Company, announce the creation of a new class of DNA-aptamer based oxidation inhibitors. These molecules stabilize vitamin C, enabling development of new cosmetics, nutraceuticals, beverages and therapeutic agents with longer shelf life and potentially greater efficacy. Nexmos plans to launch the first product containing these molecules in the second half of 2017, as a component of an antioxidant beverage formulation, in collaboration with a major health beverage company.

Aptamers are small DNA or RNA molecules that are selected *in vitro* to bind specifically to a target because they fold into a shape that fits their target. Targets can be cells, viruses, proteins, small molecules or metabolites. Manufacture uses well-established synthetic chemistry methods, providing high purity and minimal batch to batch variability. At scale, aptamer manufacture can cost significantly less than more commonly used affinity agents such as antibodies. Aptamers are also relatively stable, non-toxic, and biodegradable. While aptamers with enzymatic activity are well known, these are the first aptamers known to inhibit oxidative damage.

“Base Pair addressed a significant need with this project,” said Bill Jackson, Ph.D., Founder and Chief Scientist at Base Pair. “Creating a new aptamer that’s selective for its target is like throwing a bucket of keys at a lock and hoping one sticks in the keyhole. Finding an aptamer that not only binds vitamin C but also inhibits its oxidation is like throwing a bucket of keys at a locked door and having one not only fit, but turn, unlock and open the door.”

“We are tremendously excited about the potential for this new class of molecules” said Nelson Son, CEO, Founder of Nexmos. Nexmos will market the aptamer-vitamin complexes under the trade name, APTAMIN™. APTAMIN™ C, the first Aptamin product, solves the fundamental stability problem of vitamin C which has limited its applications.

DNA synthesis has in the past been used to generate tools for research use, therapeutic use, forensics, and diagnostics. In most cases DNA and RNA aptamers are used as capture or detection reagents. This is the first time a synthetically manufactured DNA aptamer has been shown to be useful for general consumer products.

“We are pleased Base Pair agreed to work with us to develop aptamers to additional targets, including vitamins, food supplements, and human diagnostic biomarkers,” said Mr. Son. The approach used by Base Pair to stabilize vitamin C can be used to identify and create molecules that stabilize other targets, including small molecule drugs. Base Pair and Nexmos are in the process of initiating the next series of development projects, to create aptamers that stabilize other commercially important molecules.

About Base Pair Biotechnologies

Base Pair Biotechnologies is a privately held, Texas-based biotechnology company, focused on providing highly customized, consultative aptamer discovery and development services for customers in multiple market segments, including diagnostics, animal testing, therapeutics, agriculture and environmental testing. Base Pair's technology platform includes novel libraries, patented and trade secret methods for multiplexing the aptamer discovery process, and highly effective screening and validation methods. While protein and peptide targets are routine, Base Pair is especially expert at creating novel affinity agents with high selectivity and affinity for small molecules, including toxins, metabolites and drugs. By performing selection under end use conditions, resulting aptamers function well in customer assays or other end use applications. The company also collaborates with multiple academic, commercial and government institutions to develop new tools and technologies.

More information about Base Pair Biotechnologies and aptamers can be found at basepairbio.com.

About Nexmos, Inc.

Nexmos is a South Korea based bioventure company founded in 2014, focusing on research and development of aptamer based technology in unique variety of applications. Aptamin™ formulations, under development by Nexmos, are extending aptamer applications into anti-aging, cosmetics, nutraceuticals and health beverages markets. Nexmos is also developing wearable diagnostic devices using contact lenses and microneedle arrays. These aptamer functionalized devices will bring forth a new paradigm in early diagnosis of various diseases including cancers, Alzheimer's and Parkinson's disease. In order to shorten the path to commercialization, Nexmos is closely collaborating with government institutions, academia, hospitals and companies around the world. Based on the motto "New Value from New Idea and New Philosophy," Nexmos will continue to develop new technologies from creative ideas, bringing innovation to the market.

More information about Nexmos can be found at Nexmos.com.

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