

DSS's Impact BioMedical Successfully Synthesizes First Quantum-Based Compound

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ROCHESTER, N.Y., Sept. 07, 2021 (GLOBE NEWSWIRE) -- After more than a year of research and development, Impact BioMedical, Inc., and its research partner Global Research and Discovery Group Sciences (GRDG) announce today that its first Quantum-based compound was successfully synthesized. The compound synthesized is an adjuvant which enhances a body's immune response to a foreign antigen and is being sent to a major University for testing.

Impact BioMedical, Inc., a wholly owned subsidiary of Document Security Systems (NYSE American: DSS), and GRDG Sciences initiated the research project called Quantum in Summer 2020. The purpose of the project was two-fold: to forge a new frontier by exploring new methods for developing medicinal protocols that work more efficiently, thereby encouraging further research and development across the pharmaceutical industry, while at the same time mitigating a projected patent cliff crisis.

A New Frontier

The Quantum technology is designed to enhance existing therapeutics by looking beyond current molecular enhancement techniques such as molecular substitution, halogenation, prenylation and other biological enhancement methods typical of present therapeutic development schema. This marriage of quantum and molecular mechanics essentially created a classic example of bionics that theoretically increases the efficacy against a variety of diseases.

"We're very proud of this accomplishment," said Daryl Thompson Director of Scientific Initiatives at Global Research and Discovery Group. "We've learned that in general, 'bionics' are creating something mechanical that is inspired by nature. In this case, we created biological molecules that are inspired by mechanical aspects such as quantum physics. That's why we use the term 'bionics.'"

The increase in the quantum molecule's therapeutic activity is due to alterations in the intermolecular state, which yields a molecule with increased reactivity to ligand interactions with significantly lower degradation rates. In short, the Quantum molecule will possess both hyper-reactivity as well as hyper-persistence.

GRDG Chief Scientific Advisor Dr. Roscoe M. Moore, Jr., the retired United States Assistant Surgeon General and former Epidemic Intelligence Services (EIS) Officer at the U.S. Centers for Disease Control said that this step toward quantum molecules could pave the way for new medical breakthroughs.

"This is the first step toward a shift in how we create the medicines we need now and the way we will develop the medicines of the future," he said. "This really provides a potential answer to many medical questions that are out there."

The Patent Cliff

A Patent Cliff is a phenomenon that occurs when the patent expires on a product or a group of products that represent a high percentage of the total market. The abrupt drop in sales that follows and the subsequent decrease in a company's annual revenue impacts that company's ability to continue research and development for future patents.

In the pharmaceutical industry, for example, a patent cliff is noticed when it affects "blockbuster products," which the industry defines as a product with sales exceeding \$1 billion per year. According to the World Health Organization, since 2013 about 95 percent of the world's essential medicines are off-patent, meaning that generic equivalents are available. This means that the other 5 percent represents patented medicines, whose income is supporting further pharmaceutical research and development. As that 5 percent move out of patent and into the marketplace for generic alternatives, there will be a \$100 billion impact on the whole industry. This \$100 billion sudden drop in revenue will certainly shrink a company's ability to produce new medicines and therapies, stunting the growth of the industry.

As the world climbs out of the COVID-19 pandemic, this looming threat of a patent cliff takes on greater importance.

"This is what makes today's announcement so important," said Frank D. Heuszel, CEO of Impact BioMedical, Inc. "Creating and utilizing new methods for therapeutic solutions gives the industry new and fertile ground upon which to focus new research and development, which is critical for us to continue to create and maintain a healthier and safer world."

Through the Quantum research project, Impact BioMedical and GRDG have taken the first step in creating a new way to make medicine. Quantum uses advanced methodologies to create a new class of medicinal chemistry that we hope will be more effective as compared with natural compounds and existing drugs while maintaining the safety profile of the original molecules. This new technique works on a sub-molecular level to increase the efficacy of the molecules. We believe that Quantum could be used to improve and re-patent a variety of therapeutically important compounds.

About Impact BioMedical, Inc.

Impact BioMedical, Inc. ("Impact BioMedical") is a wholly owned subsidiary of DSS. Impact BioMedical strives to leverage its scientific know-how and intellectual property rights to provide solutions that have been plaguing the biomedical field for decades. By tapping into the scientific expertise of GRDG Sciences, LLC, Impact BioMedical pledges to undertake a concerted effort in the R&D, drug discovery and development for the prevention, inhibition, and treatment of neurological, oncological and immuno-related diseases. For more information on Impact BioMedical visit <http://impbio.com/>.

About Document Security Systems, Inc.

DSS is a multinational company operating businesses focused on blockchain security, direct marketing, healthcare, consumer packaging, real estate, renewable energy, and securitized digital assets. Its business model is based on a distribution sharing system in which shareholders will receive shares in its subsidiaries as DSS strategically spins them out into IPOs. Its historic business revolves around counterfeit deterrent and authentication technologies, smart packaging, and consumer product engagement. DSS is led by its Chairman, Mr. Fai Chan, a highly successful global business veteran of more than 40 years specializing in corporate transformation while managing risk. He has successfully restructured more than 35 corporations with a combined value of \$25 billion.

For more information on DSS visit <http://www.dsssecure.com>.

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