



INSPIROTEC

Inspirotec Inc and Argonne National Laboratory Collaborate on Largest Study to Date of Airborne Allergens and Microbiome in Same Homes.

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CHICAGO, May 13, 2019 (GLOBE NEWSWIRE) -- Inspirotec Inc., is a rapidly growing Chicago-based company with its Exhale™ highly portable whole house allergen measuring system and remediation support services. Exhale™ is the only air quality system with field studies based on unique proprietary technology for measuring airborne bio-material. Inspirotec today announced the extension of its largest ever field study of inhalable allergens in homes¹ to the airborne microbiome.

“It is probably one of the largest studies of airborne allergen exposures given the number of homes involved,” according to Martin Chapman PhD, President and CEO of Indoor Biotechnologies Inc., which developed the sensitive MARIA® technology used for measuring the airborne allergens. Patients run the air sampling device in their own homes and produce data on allergens and microbiome in the same samples. This is now appearing in the journal *Microbiome* (<https://microbiomejournal.biomedcentral.com/>). Relationships were determined between allergen load, microbial content and a large amount of other meta-data for each sample. Significant associations are shown between allergen burden and the microbiota in air from the same sample, and these associations relate to the characteristics of the homes and neighborhoods.

Results are obtained utilizing the innovative home-based study, combined with high throughput genomic sequencing by Dr. Jack Gilbert and his colleagues at Argonne

National Laboratory and University of Chicago, now having moved to the Scripps Institution of Oceanography and Department of Pediatrics at the University of California San Diego.

Allergists from five medical practices recruited patients to run the sample collection. They provided patients with instructions and packages to take home, plug in their bedrooms to test the air there for a few days, and patients returned them to their doctors.

“This study shows that it is now possible for patients to collect air samples from their own homes, and generate big data on the allergen content and the microbial community of the air they are breathing. This kind of analysis permits a much deeper understanding of health impact of the breathable air than has been available up till now,” says Julian Gordon PhD, co-lead researcher in the study and co-founder of Inspirotec. “Previous studies of this kind have required the intrusion of skilled technicians to run bulky, noisy, equipment. Further, analysis was done on settled dust, not on the air, as it was believed that the amounts in the air were often too low to measure, despite the fact that it is the inhaled material in the air that causes symptoms.”

As the other lead researcher, Jack Gilbert, PhD, at UC San Diego, also indicated, “This technology permits us to do more expansive field studies than were previously conceivable, and, indeed, we are currently introducing it in the COMPASS study in 100,000 homes (<https://compass.uchicago.edu/>) through my colleagues at the University of Chicago.”

In this study, similar to the previously published allergen study¹, significant variations were found according to locality, open or closed windows, presence or absence of pets. Interestingly, while this study confirms the profound effect dogs have on the airborne microbiome, cats had none.

About Inspirotec Inc.

Inspirotec Inc is the only company providing airborne allergen detection either through physicians, industrial hygienists, indoor air quality professionals, home resale, or direct to consumer. Direct to consumer is marketed under the brand name Exhale and can be purchased through www.exhalenow.com.

Inspirotec has an extensive portfolio of patents* as well as publications in the peer-reviewed literature¹⁻⁴.

*US patents 8,038,944, 9,216,421, 9,360,402, 9,481,904, 9,618,431 as well as patents and application world-wide.

¹ Gordon J, Detjen P, Nimmagadda S, Rogers L, Patel S, Thompson J, Reboulet R and Gandhi P. Bedroom exposure to airborne allergens in the Chicago area using a patient-operated sampling device. *Ann Allergy Asthma Immunol.* 2018;121(1):211-220.

² Gordon J, Gandhi P, Shekhawat G, Frazier A, Hampton-Marcell J, Gilbert JA. A simple novel device for air sampling by electrokinetic capture. *Microbiome*. 2015;3.

³ Gordon J, Detjen P, Kelso D, Gandhi P. A new patient-operated sampling device for measurement of aeroallergens. *Ann Allergy Asthma Immunol*. 2016;116(5):475-6.

⁴ Gordon J, Reboulet R, Gandhi P, Matsui E. Validation of a novel sampling technology for airborne allergens in low-income urban homes. *Ann Allergy Asthma Immunol*. 2018;120(1):96-97.

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