# BIO INDOOR AIR PURIFIER

BIOLOGICAL TECHNOLOGY FOR REMOVING INDOOR AIR POLLUTANTS.

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## MARKET

Air pollution is a growing concern worldwide, especially in large cities that are densely populated. In 2011, the global market for air filtration was approximately 7,000 million dollars, with a CAGR of 5%. This technology was developed to be used in the interior of residential y commercial buildings, which represents about 50% of the air filtration market. Prices for small mobile devices are close to 100 dollars.

## UNMET NEED

Poor Indoor Air Quality (IAQ) is a growing concern because of the impact it can have on health and well-being. These effects can be short-termed, such as eye and throat irritation, coughing, sneezing, fatigue, dizziness and headaches, or long-term, such as respiratory disease and cancer. In Chile, 90% of the population lives in contaminated urban areas, where polycycle aromatic hydrocarbon (PAH) pollution is the most common. A chronic exposure to high levels of this volatile organic compound (VOC) increases 10 times the likelihood of developing lung cancer or testicular cancer in men. There are technologies that seek to address this problem, but they're not very effective in the control and elimination of VOCs, due to the multiple types and sources of generation. Biological purifiers have shown a potential in indoor air purification but are limited by their low treatment capacity.

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## SOLUTION

The product consists of the development of biological air purifiers, with capacity to treat large air volumes efficiently, reducing organic contaminants to a minimum. The technology uses a combination of bacteria and fungi that accelerate the biodegradation of volatile organic compounds (VOCs).

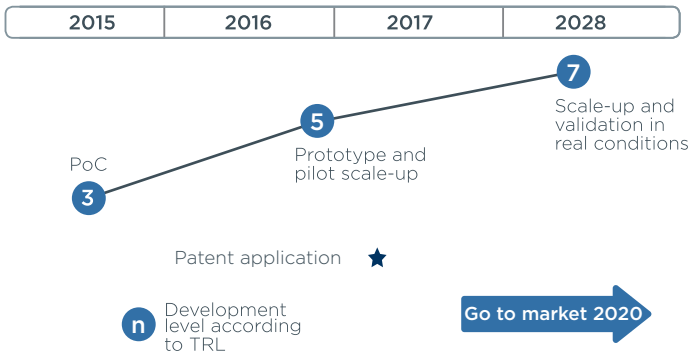
## ADVANTAGES

> High efficiency treatment.
> Able to adapt to and degrade different compounds.
> Potential elimination of particles.

## INTELLECTUAL PROPERTY

Provisional patent filed.

## DEVELOPMENT STAGE




## BUSINESS SUMMARY DEPARTMENT OF INNOVATION

The Dirección de Innovación of the Universidad de los Andes seeks to support, canalize and efficiently manage the results from research conducted at the University to the public and private sector, both national and international. This is done in order to promote the transfer and application of the knowledge generated in the University so as to benefit the society and contribute to the economic development.

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## PROJECT DIRECTOR

Alberto Vergara, Biochemist Civil Engineer and Ph.D. in Chemical Engineering Sciences.

> He researches transport phenomena in biological systems, biological treatment of gases and the design and scaling of bioreactors.

> He is the Academic Vice-Dean of the Engineering and Applied Sciences Faculty.

## RESARCH TEAM

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