

# An anti-N monoclonal antibody as a new therapy for the Respiratory Syncytial Virus

## DESCRIPTION

Infection caused by human Respiratory Syncytial Virus (RSV) is considered the most important etiologic agent of acute infections of the lower respiratory tract in infants, children and older adults worldwide, with health services collapsing every winter. The WHO has estimated that more than 30 million cases that have RSV are reported annually, of which 3.4 million were hospitalized with a mortality of 200,000 infants or children.

Despite being a serious national and global public health problem, there is no vaccine or drugs to prevent this infection, protecting the global population. Therefore, together with the support of the Pontificia Universidad Católica de Chile and the Fundación Copec UC, we are developing a monoclonal antibody capable of protecting against infection caused by RSV, this new therapy targets Nucleoprotein (N) of RSV, taking as mechanism of action the development of immune memory.

## OPPORTUNITY

The monoclonal antibody therapy market was valued at US \$ 174.2 billion by 2026 with a CAGR of 6.9% (according to Coherent Market Insights). This is due to the great therapeutic advantages of these medications over existing ones. The FDA and EMA have approved more than 78 monoclonal antibody therapies (according to Biopharma.com).

For therapies against RSV, a market growth of 29.9% is estimated for 2024, going from US \$ 640 million to US \$ 2.3 billion (according to Data Global).

We believe that Copec-UC Foundation, together with the PUC and its researchers, are the spearhead for the development of a new therapy against RSV, allowing the country to decongest the public health system in winter, decrease public spending and end with the inequality in the prophylaxis of the RSV, which, due to its high cost, is only guaranteed for a small group of the population.

## MARKET

The world market includes the population susceptible to suffering from medium and / or severe severity due to RSV infections. This population consists in premature babies (under 36 weeks of gestation) and infants between 0- 6 months of life. Also includes among those susceptible to older adults (over 65 years) and immunocompromised patients.

## ADVANTAGES

The proposed therapy with the Anti-N monoclonal antibody has the following differences / advantages:

1. Binds to protein N on the surface of infected cells
2. It activates the complement pathway
3. Potentially promotes the generation of immune memory
4. Recognizes samples from patients infected with RSV A and B strains
5. Potentially requires a single administration



▲ The vaccine could eradicate the disease, allowing the country to decongest the public health system in winter

## APPLICATIONS

- Therapy against RSV infection
- HRV detection by Flow cytometry, ELISA and immunofluorescence in clinical samples
- Use of Mab for research laboratory techniques such as Western blot, ELISA, Dot Blot, Immunofluorescence, Flow Cytometry

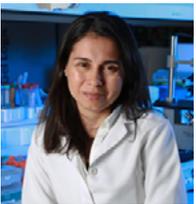
## INTELLECTUAL PROPERTY

- Current status: Request sent
- Technology owners: Pontificia Universidad Católica de Chile
- Patents: PCT / CL2018 / 050079

## INVENTORS



▶ **Alexis Kalergis**  
Biochemist and Doctor in Microbiology and Immunology  
Pontificia Universidad Católica de Chile  
Professor  
[akalergis@bio.puc.cl](mailto:akalergis@bio.puc.cl)



▶ **Susan Bueno**  
Medical Technologist and Doctor in Biomedical Sciences  
Pontificia Universidad Católica de Chile  
Associate Professor  
[sbueno@bio.puc.cl](mailto:sbueno@bio.puc.cl)

## STATE OF DEVELOPMENT OF TECHNOLOGY

The current state of technology is a laboratory-scale prototype, which already has a patent application

## PROJECT ACKNOWLEDGMENTS

Our anti-N monoclonal antibody was highlighted by the PATH website which stands for Program for Appropriate Technology in Health, an international health initiative under the Bill and Melinda Gates Foundation that selects research that will impact global health. This antibody has differentiating advantages such as the use of a new target (RSVN protein N), allowing the development of immune memory and potentially a single dose would be applied.



▲ The WHO has estimated that more than 30 million cases of RSV-infected persons are reported annually, of which 3.4 million were hospitalized and with a mortality of 200,000 infants or children

## FOR MORE INFORMATION



▶ **Fundación Copec-UC**

Atilio Ziomi  
Commercial Manager  
[aziomi@uc.cl](mailto:aziomi@uc.cl)  
+56 2 2354 1942



▶ **Pontificia Universidad Católica de Chile**

Alexis Kalergis  
Professor  
[akalergis@bio.puc.cl](mailto:akalergis@bio.puc.cl)  
223542846