Respiratory disease research at Novartis " >

Developing targeted therapeutics to restore the freedom to breathe.

For the millions of people living with respiratory diseases around the world, even routine activities such as climbing stairs or walking with friends and family can pose a challenge.

Our respiratory disease researchers are developing transformative therapies to modify or reverse the course of these illnesses rather than just treat their symptoms.

This confocal microscopy image of cells in lung tissue shows the pulmonary ionocyte (red stain), the type of cell in which a gene of interest for cystic fibrosis therapy is active. Image courtesy Lindsey Plasschaert.

The team leverages insights from clinical research, next-generation analytical tools, and data and digital technologies to better understand how respiratory diseases vary from patient to patient. We are uncovering the cellular basis for these differences to discover transformative therapies that improve patients' lives. This approach allows us to develop targeted therapeutics that block key steps in disease processes so that patients can breathe easier and lead more active lives.

Our priorities are to address unmet medical needs in the following areas:

- **Chronic obstructive pulmonary disease (COPD)**: We are incorporating cutting-edge multi-omic approaches to understand the natural history of disease at the molecular level and enable identification of key pathways responsible in disease pathobiology. In addition, we are studying and developing cystic fibrosis transmembrane regulator (CFTR) gene potentiators that help the lungs clear harmful substances.
- **Idiopathic pulmonary fibrosis (IPF)**: We are taking a multi-disciplinary approach to identify central nodes responsible for progressive scarring and aberrant lung repair in IPF. Our goal is to halt disease progression and promote repair of the distal lung.
- **Asthma**: We are developing inhaled antibodies as a disease-modifying strategy.

We also are seeking out strategic opportunities with transformational potential in other conditions, such as acute respiratory distress syndrome (ARDS), sarcoidosis, bronchopulmonary dysplasia and cystic fibrosis. For one of our projects, we discovered the type of cell in which the CFTR gene is active, a critical breakthrough that opens doors to treating cystic fibrosis patients with gene therapy. Our goal is to identify and target the varied pathways that different respiratory diseases share and benefit patients by broadening uses for the drugs in our portfolio.

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