

# Targeting inflammatory protein could treat severe asthma

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Just weeks after news of a sharp national spike in asthma deaths—with South Australia recording the highest increase in a single year (88%)—scientists have revealed a promising new treatment for the chronic lung disease.

Australian researchers have found that a family of proinflammatory molecules called beta common cytokines control inflammation and scarring of the airways (fibrosis) in severe and steroid-resistant asthma.

They believe that a human therapeutic antibody called trabikihart could be the key to effectively blocking the inflammation and scarring.

The findings, [published](#) in the *Journal of Allergy and Clinical Immunology*, are a result of a joint study led by researchers from the University of South Australia (UniSA) and the Royal Melbourne Institute of Technology (RMIT), in collaboration with researchers from CSL and SA Pathology.

Joint study leader Dr. Damon Tumes, Head of the Allergy and Cancer Immunology Laboratory in the Center for Cancer Biology, says the findings are significant.

"Inflammation and [tissue damage](#) in severe asthma is caused by several types of immune cells that enter the lungs due to allergens, viruses and other microbes that interact with the airways," Dr. Tumes says.

"In some people, the inflammation is resistant to steroids—the first treatment option for controlling severe asthma.

"Currently, limited treatment options are available for severe asthma. New and existing drugs often only target single molecules when multiple overlapping cells and inflammatory pathways are responsible for asthma.

"Targeting multiple [inflammatory cytokines](#) with a single drug may be the key to treat and control complex and severe chronic airway disease."

The [most recent statistics](#) show a 30% rise in asthma-related deaths (467 people) nationally in 2022, with South Australia recording the most drastic increase at 88%.

According to experts, most of the deaths were preventable and were linked to people not having treatment on hand, or using it as prescribed, especially inhaled corticosteroids.

The year 2022 marked the highest asthma deaths since 2017, partly driven by the post-COVID return of viral respiratory infections which are associated with increases in asthma hospitalizations.

Widespread rainfall, triggering an increase in fungal spores and pollen, is also a factor.

**More information:** Hao Wang et al, Dual inhibition of airway inflammation and fibrosis by common  $\beta$  cytokine receptor blockade, *Journal of Allergy and Clinical Immunology* (2023). [DOI: 10.1016/j.jaci.2023.10.021](#)

Provided by University of South Australia

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