

Research Award:

Factor Inhibiting HIF (FIH) in lung fibroblasts: a determinant of aberrant mesenchymal-epithelial crosstalk?

Awarded to: Siyuan Wang **Amount:** £10,000 (June 2022 – June 2024)

Lay summary

Idiopathic pulmonary fibrosis (IPF) is a life-threatening lung condition characterized by excessive scar tissue formation by fibroblasts, leading to severe impairment of gas exchange. The average life expectancy post-diagnosis is 2-4 years, making it more fatal than many cancers. Currently, there is no cure for IPF, necessitating new treatments.

Our recent research highlights the importance of cellular “cross-talk” in IPF progression. We received the grant to investigate if the loss of FIH activity sends incorrect signals to cells, contributing to fibrosis. Understanding this mechanism could lead to innovative drug targets. We successfully deleted FIH in human lung fibroblasts and discovered that FIH acts as a metabolic switch. Without FIH, cells shift from an energetic to a quiescent mode, suggesting FIH's role in energy production and potential as a therapeutic target.

The AAIR award funded our lab experiments. Part of these findings was presented at the ERS in 2023, acknowledging AAIR's support. These results will be a central component of my doctoral thesis, to be submitted in September 2024.

A part of the results was presented at the European Respiratory Society (ERS) International Congress 2023:

Siyuan Wang (2023) [oral presentation]. "Late Breaking Abstract - Factor Inhibiting HIF (FIH) as a Metabolic Switch in Lung Fibroblasts." ERS International Congress 2023, Milan, Italy.

The data are currently being integrated into a journal paper, which is in the writing pipeline. This work will also form a key part of my doctoral thesis, to be submitted in September 2024.
