University of Leicester
AIM studentship project 2026

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Section 2 – *Project Information*

Project Title	The role of PKN2 in Progressive Lung Fibrosis

Project Summary

Idiopathic Pulmonary Fibrosis (IPF) is a life-limiting lung disease in which relentless and irreversible scarring reduces the lungs' ability to function. Current treatments can only slow the disease, and new approaches that directly target the scarring process are urgently needed.

This project is part of an exciting collaboration between the University of Leicester (UoL) and the University of Nottingham (UoN). It will investigate the role of a signalling protein called Protein Kinase N2 (PKN2), which early evidence suggests may regulate how lung cells respond to injury and contribute to the development of fibrosis. By understanding how PKN2 behaves in both healthy and diseased lung tissue, we aim to uncover why scarring continues to progress in IPF and how this drives declining lung function in patients.

The student will use state-of-the-art molecular, cellular and tissue-based techniques to explore how PKN2 influences lung fibroblasts—the key cells responsible for producing scar tissue. They will be primarily based at UoL, with the opportunity to spend dedicated time at UoN developing complementary skills and benefitting from the wider collaborative expertise across both institutions.

This project offers an exciting opportunity to contribute to impactful, translational research tackling one of the most urgent challenges in respiratory medicine.

References

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4. Danno, S., et al., *PKN2 is essential for mouse embryonic development and proliferation of mouse fibroblasts.* Genes Cells, 2017. **22**(2): p. 220-236.
5. Kubouchi, K. and H. Mukai, *PKN2 is involved in aggregation and spheroid formation of fibroblasts in suspension culture by regulating cell motility and N-cadherin expression.* Biochemistry and Biophysics Reports, 2021. **25**: p. 100895.

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