

Scientists take step toward new, targeted lung cancer treatment

August 21 2018



Lung CA seen on CXR. Credit: [CC BY-SA 4.0](#) James Heilman, MD/Wikipedia

Scientists have identified a key molecular player in a subtype of lung cancer which could lead to a new way to tackle the disease, according to research published in *Nature Communications*.

Cancer Research UK-funded scientists based at the University of Cambridge found lung squamous cell carcinoma (LUSC) cells contained high amounts of a protein called BCL11A. The study showed that manipulating the gene responsible for the protein stopped the development of LUSC in a mouse model of the disease.

The study also revealed a signaling pathway in which BCL11A was involved, and found a potential druggable target called SETD8. Targeting SETD8 genetically and with early forms of drugs selectively attacked LUSC [cancer](#) cells growing in the lab, and LUSC cells transplanted into mice.

Dr. Kyren Lazarus, study author from the University of Cambridge, said, "How LUSC develops is a bit of puzzle – until now, our molecular understanding of this process was limited.

"Our research has revealed a major piece of this puzzle, which we are now actively trying to make new drugs against."

Over the last 40 years, [lung cancer survival](#) has remained stubbornly low, particularly when compared to overall cancer survival, which has more than doubled. One of the reasons for this is the lack of targeted treatments for [lung cancer](#), and currently just five in 100 people survive their disease for 10 or more years.

Dr. Walid Khaled, lead author from the University of Cambridge, said, "Developing targeted treatments is a real opportunity for improving the outlook for patients.

"With this new drug discovery grant from Cancer Research UK, we are working to develop small molecules to specifically block BCL11A in LUSC cells. We are aiming to disrupt critical interactions that BCL11A has with other proteins and are working closely with our colleagues at the Department of Biochemistry in Cambridge and CRUK Beatson Institute Drug Discovery Unit to achieve this."

Professor Karen Vousden, Cancer Research UK's chief scientist, said: "Identifying potentially druggable targets is an early yet crucial stage in the journey toward precision medicine.

"While there is much to be done before this work could be translated into patient benefit, it's a fundamental step towards that goal and we look forward to seeing how this discovery progresses along the research pipeline."

More information: Kyren A. Lazarus et al. BCL11A interacts with SOX2 to control the expression of epigenetic regulators in lung squamous carcinoma, *Nature Communications* (2018). [DOI: 10.1038/s41467-018-05790-5](https://doi.org/10.1038/s41467-018-05790-5)

Provided by Cancer Research UK

Citation: Scientists take step toward new, targeted lung cancer treatment (2018, August 21) retrieved 5 May 2024 from <https://medicalxpress.com/news/2018-08-scientists-lung-cancer-treatment.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.